CULTURAL RESOURCES SURVEY OF PLEASANT VALLEY ROAD FROM RICHFIELD DRIVE TO OLD MILES ROAD, GARLAND, DALLAS COUNTY, TEXAS

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for
CIVIL ASSOCIATES, INC.
Dallas, Texas

TEXAS ANTIQUITIES PERMIT NUMBER 6598

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under
U.S. Army Corps of Engineers, Fort Worth District
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ABSTRACT

This report presents the results of an intensive cultural resources survey conducted by Versar, Inc., under subcontract to Civil Associates, Inc., for Grantham and Associates, Inc., and the City of Garland Engineering Department in support of a U. S. Army Corps of Engineers Section 404 permit for the proposed widening of Pleasant Valley Road and replacement of two bridge structures over Rowlett Creek and Old Rowlett Creek in northeastern Dallas County. During the current investigation, two historic-age structures (one culvert and one bridge) were recorded in the project area. Neither of these structures is recommended eligible for inclusion in the National Register of Historic Places (NRHP) or for designation as a State Antiquities Landmark (SAL). In addition, a portion of previously recorded prehistoric archeological site 41DL203 was determined to extend into the proposed project area; however, based on the results of limited test excavations, it is recommended that the portion of the site within the area of potential effects does not contribute to the eligibility of the site as a whole for inclusion in the NRHP or designation as an SAL. No additional cultural resources evaluation or mitigation are recommended. All materials generated by this project will be permanently curated at the Texas Archeological Research Laboratory at The University of Texas at Austin.

MANAGEMENT SUMMARY

This report presents the results of an intensive cultural resources survey conducted by Versar, Inc., under subcontract to Civil Associates, Inc., for Grantham and Associates, Inc., and the City of Garland Engineering Department for the proposed widening of Pleasant Valley Road and replacement of two bridge structures over Rowlett Creek and Old Rowlett Creek in northeastern Dallas County. The proposed project consists of widening approximately 0.5 miles (0.8 kilometers) of Pleasant Valley Road between Richfield Drive and Old Miles Road and the replacement of one culvert and one bridge. The proposed project requires compliance with Section 404 of the Clean Water Act and involves funds from the City of Garland; thus, these investigations were conducted in accordance with the National Historic Preservation Act and the Antiquities Code of Texas under Texas Antiquities Permit No. 6598.

The purpose of these investigations was to identify cultural resources (as defined by 36 CFR 800.4) and to evaluate the identified resources for their eligibility for inclusion in the National Register of Historic Places (NRHP), as per Section 106 (36 CFR 800) of the National Historic Preservation Act of 1966, as amended, or as designation as State Antiquities Landmarks (SALs) under the Antiquities Code of Texas (13 TAC 26). The architectural survey for this project was conducted on 12 July 2013. Archeological fieldwork was conducted in phases due to right-of-entry requirements and was performed along the westernmost portion of the study area on 19 November 2013 and along the remainder of the study area in May and June 2014.

Two historic-age structures (one culvert and one bridge) were recorded during the architectural survey in the project area. It is recommended that neither of these structures is eligible for inclusion in the NRHP or designation as an SAL. A portion of previously recorded prehistoric archeological site, 41DL203, was revisited during this survey. Previously recorded site 41DL203 was determined to extend into the proposed project area; however, based on the results of limited test excavations, the portion of the site within the area of potential effects is recommended not eligible for inclusion in the NRHP or designation as an SAL. No additional cultural resources evaluation or mitigation is recommended for this project. All materials generated by this project will be permanently curated at the Texas Archeological Research Laboratory at The University of Texas at Austin.

TABLE OF CONTENTS

Table of Contents
(cont'd)

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGMENTS

Thanks are extended to Jonathan Stewart and Alma Canning of Civil Associates, Inc., for providing Versar, Inc., with this opportunity and to Bruce Grantham of Grantham and Associates, Inc., for providing assistance with this project. Several Versar personnel were involved in this project, and their contributions are appreciated. Melissa Green was Principal Investigator through the initial stages of this investigation, and Duane Peter filled this role during the latter stages. Geospatial analysis of the project area was provided by Erin Helton who also created many of the maps and illustrations presented in this document. Tanya McDougall conducted the architectural assessment of resources within the project area with assistance from Lindsey Skelton. Andrew Parkyn assisted in the archeological fieldwork component of the project. LeeAnna Schniebs conducted the analysis of vertebrate faunal remains recovered at site 41DL203. The quality of this report was improved through technical editing by Sharlene Allday, and Denise Pemberton was responsible for its formatting and production.

CHAPTER 1
INTRODUCTION

This report presents results of a cultural resources survey conducted by Versar, Inc. (Project No. G30561.0001.005), under subcontract to Civil Associates, Inc., for Grantham and Associates, Inc., and the City of Garland Engineering Department. The purpose of this study was to identify and provide data for the management of cultural resources that may be adversely affected by the widening of approximately 0.5 miles (mi; 0.8 kilometers [km]) of Pleasant Valley Road in Garland, Dallas County, Texas. The proposed project requires compliance with Section 404 of the Clean Water Act and involves funds from the City of Garland, a political subdivision of the state of Texas. Thus, these investigations were conducted in accordance with the National Historic Preservation Act and the Antiquities Code of Texas under Texas Antiquities Permit No. 6598.

The project area crosses the Rowlett Creek valley and is located along Pleasant Valley Road between Richfield Drive and Old Miles Road (Figure 1). Pleasant Valley Road will be expanded from a two-lane undivided roadway to a four-lane divided roadway. In addition, one culvert and one bridge will be replaced with two larger bridge structures to elevate the roadway across the Rowlett Creek floodplain. Impacts will occur within the current and proposed right-of-way of Pleasant Valley Road and would extend approximately 250 feet (ft; 76.2 meters [m]) on each side of the existing roadway. Impacts along the floodplain will extend approximately 20 ft (6.1 m) below the existing grade of the landscape. The area of potential effects (APE) for this project is approximately 3.26 acres and encompasses the entire footprint of the proposed impacts.

The proposed action is subject to conditions stipulated in Section 404 of the Clean Water Act (32 U.S. Code [USC] 1344; Public Law [P.L.] 92-500) administered by the U.S. Army Corps of Engineers (USACE; Project No. SWF 2012-00311). In addition, funding by the City of Garland, a political subdivision of the state of Texas, requires project review under the Antiquities Code of Texas (Texas Natural Resource Code, Title 9, Chapter 191) and accompanying Rules of Practice and Procedure (Texas Administrative Code, Title 13, Chapter 26 [13 TAC 26]). Compliance with these state and federal permitting requirements activates conditions of both the National Environmental Policy Act (NEPA; 42 USC §§ 4321–4347; P.L. 91–190; 83 Stat. 852) and Section 106 of the National Historic Preservation Act of 1966 (NHPA; 16 USC § 470 et seq.; P.L. 89–665; 80 Stat. 915). The purpose of these investigations was to conduct an inventory of cultural resources (as defined by Code of Federal Regulations, Title 36, Section 800.4 [36 CFR 800.4]) present within

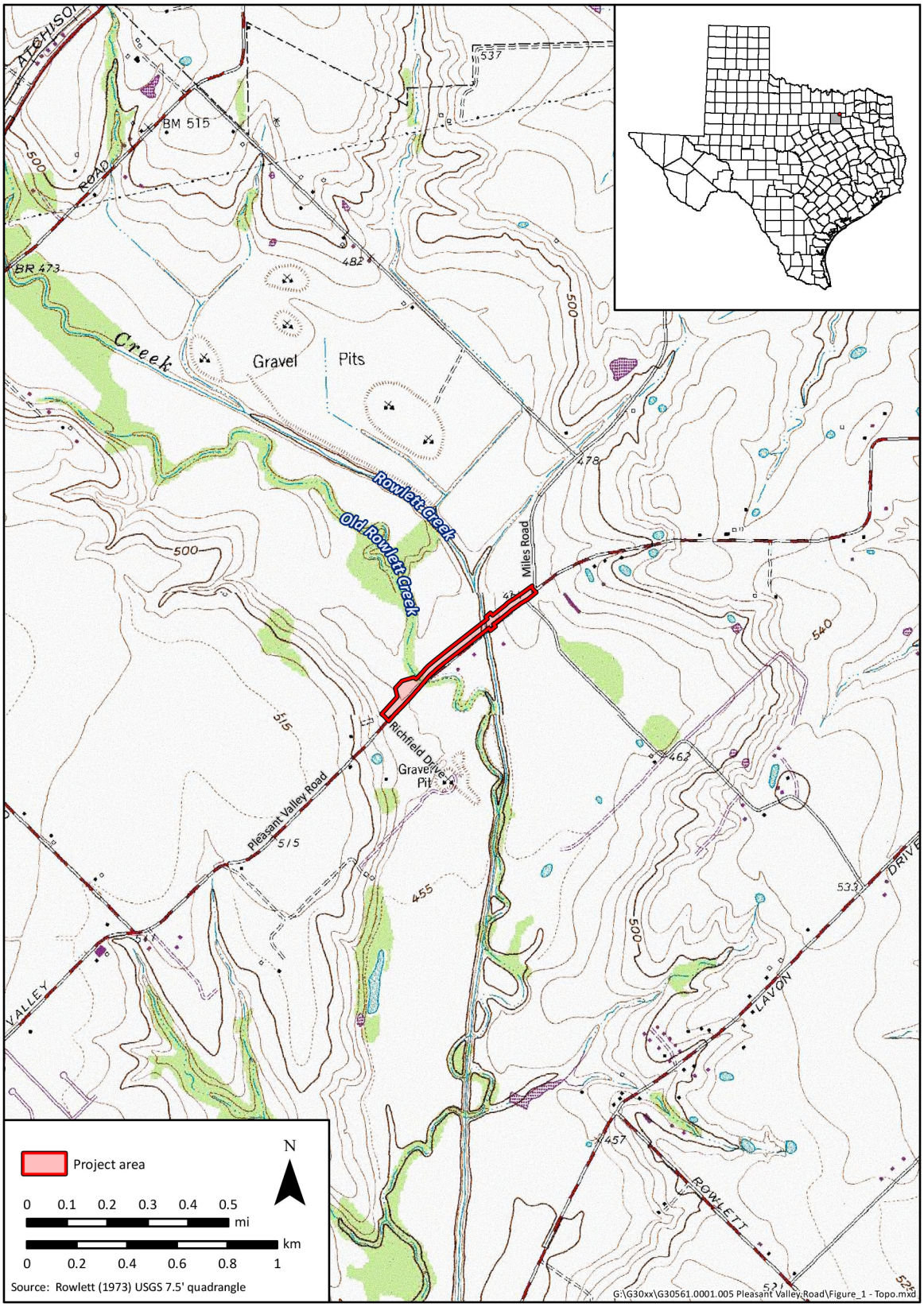

Figure 1. Location of the proposed project area in northeastern Dallas County, Texas.

the APE and to evaluate identified resources for their eligibility for inclusion in the National Register of Historic Places (NRHP), as per Section 106 of the National Historic Preservation Act of 1966, as amended, or for designation as State Antiquities Landmarks (SALs) under the Antiquities Code of Texas (13 TAC 26.7). Archeological fieldwork for this project conforms to the guidelines and standards proposed by the Council of Texas Archeologists (CTA) and adopted by the Texas Historical Commission (THC). This cultural resources investigation consisted of a background literature and site records review, an assessment of archival sources, a pedestrian reconnaissance of the project area, an architectural survey, the systematic excavation and documentation of mechanically excavated trenches along the project area, and limited hand-excavated test units for the evaluation of the portion of prehistoric site 41DL203 within the APE.

The architectural survey was performed by Tanya McDougall and Lindsey Skelton on 12 July 2013. Archeological reconnaissance was performed along the westernmost portion of the study area by Arlo McKee and Christopher Goodmaster on 19 November 2013 and along the remainder of the study area by Christopher Goodmaster and Andrew Parkyn on 7 and 16 May 2014. Test excavations at site 41DL203 were conducted by Christopher Goodmaster and Andrew Parkyn on 5–6 June 2014. Melissa Green was the Principal Investigator during the initial stages of this project, and Duane Peter served this role during the latter stages of the project. All artifacts collected and records generated by this project will be permanently curated with the Texas Archeological Research Lab (TARL) at The University of Texas in Austin.

CHAPTER 2
ENVIRONMENTAL SETTING

The proposed project area is located within the Blackland Prairie in northeastern Dallas County, Texas. The soils in this region are predominantly silty clays and clay loams derived from the in situ weathering of the underlying Cretaceous-age geology. This region is located within the Texan biotic province (Blair 1950), which once supported a variety of flora and fauna. The humid subtropical climate of the area is characterized by hot summers and mild winters.

PHYSIOGRAPHY

The region encompassing the project area is the Blackland Prairie, characterized by gently rolling to nearly level upland plains environments (Griffith et al. 2004). The underlying geology of the project area is primarily the Upper Cretaceous Austin and Ozan (Lower Taylor Marl) formations with Holocene alluvium along the Rowlett Creek valley (Bureau of Economic Geology 1987). These geological formations consist of interbedded chalks and calcareous micaceous clays (marls). The presence of these carbonate formations and marls has influenced the subsequent development of the soils and topography of the region. The project area occupies an elevation range of 139–143 m (456–469 ft) above mean sea level (amsl). The floodplain of Rowlett Creek is nearly level while the valley margins are characterized by gently slopes (Figure 2).

HYDROLOGY

The proposed project area is situated along Rowlett Creek in the East Fork drainage of the Trinity River, which was heavily modified by several large USACE flood control and reservoir projects during the mid- to late-twentieth century. The project area is primarily located on the floodplain formed by the meandering natural channel of Rowlett Creek (Old Rowlett Creek). Surface water flow has largely been redirected from the relict natural channel to a deeper, straighter artificial channel (Rowlett Creek; see Figure 2) that carries the area's surface water approximately 7.0 km (4.3 mi) south into the western arm of Lake Ray Hubbard.

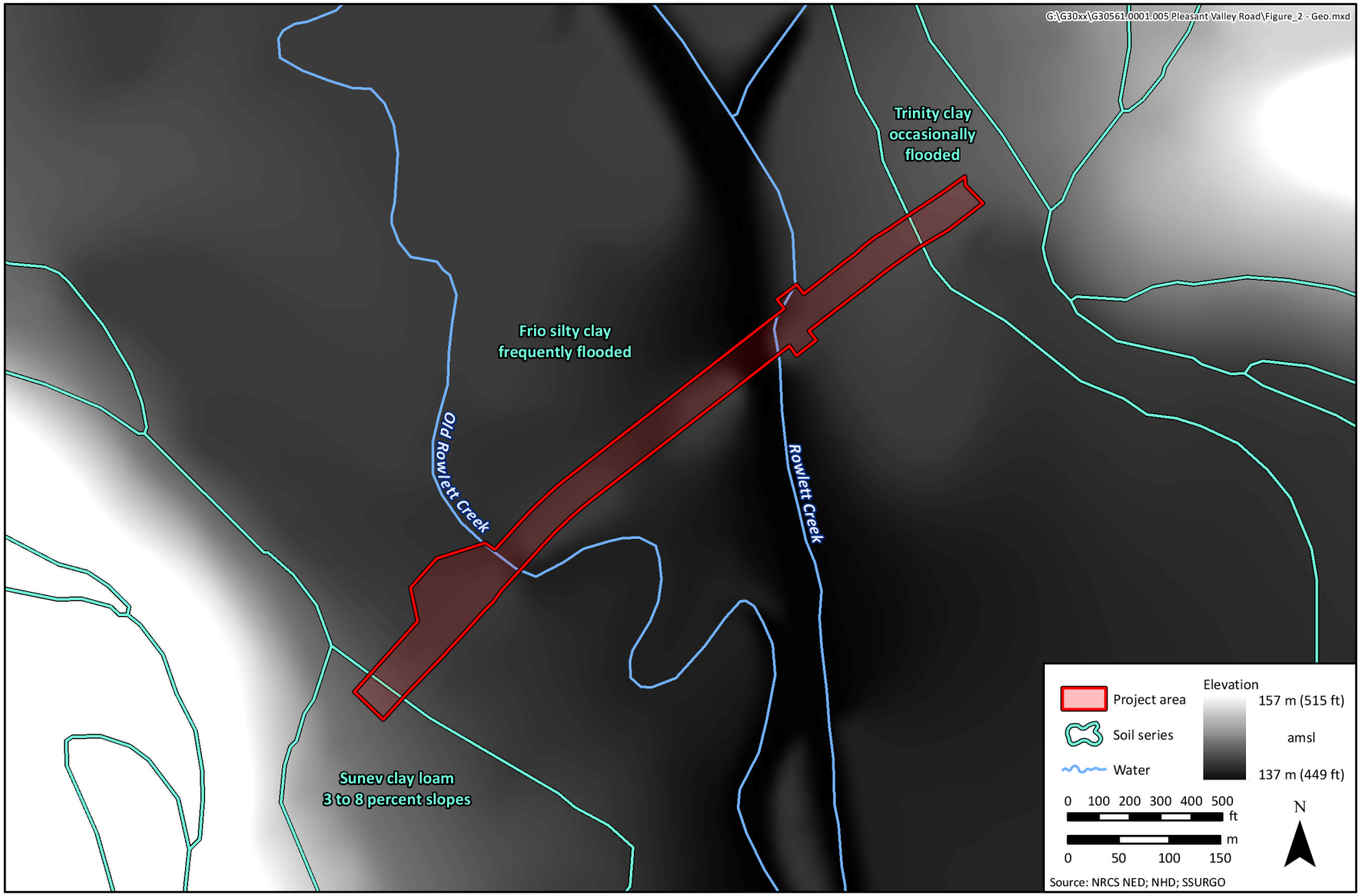

Figure 2. Topography, hydrology, and soils of the project area.

SOILS

The proposed project area is situated across three soil series (Table 1, see Figure 2). Most of the project area, spanning the floodplain of the Rowlett Creek valley, is mantled by the frequently flooded Frio silty clay soil series. The northeasternmost terminus of the project area is mapped as an area of occasionally flooded Trinity clay and the southwestern terminus of the project area extends onto the upland toeslope occupied by Sunev clay loam. All information regarding the soils of the project area has been synthesized and summarized from information supplied by the Soil Conservation Service (Coffee et al. 1980:25) and the Natural Resources Conservation Service (2014).

Table 1
Soils within the Proposed Project Area

Soil Unit	Landform	Parent Material	Taxonomic Classification	Typical Profile
Frio silty clay	Floodplain	Alluvium	Fine, montmorillonitic, thermic Cumulic Haplustolls	0–102 cm*; A—very dark grayish brown (10YR 3/2) silty clay 102–203 cm; Bk—dark grayish brown (10YR 4/2) silty clay
Trinity clay	Floodplain	Alluvium	Very-fine, smectitic, thermic Typic Hapluderts	0–41 cm; Ap/A—dark gray (5YR 4/1) clay 41–92 cm; Bss1—dark gray (5YR 4/1) clay 92–163 cm; Bss2—dark gray (5YR 4/1) clay
Sunev clay loam	Terrace; toeslope	Alluvium	Fine-loamy, carbonatic, thermic Udic Calciustolls	0–30 cm; Ap/A—dark grayish brown (10YR 4/2) loam 30–53 cm; Bk1—brown (10YR 5/3) loam 53–152 cm; Bk2—very pale brown (10YR 7/4) loam 152–183 cm; Bk3—very pale brown (10YR 7/4) loam

* cm = centimeter (.39 inch [in])

FLORA AND FAUNA

The Blackland Prairie is the southernmost extension of the North American Tallgrass prairie and is within the Texan biotic province (Blair 1950). This ecoregion has undergone profound alterations from its native state by historic period farming and ranching and by modern urban, suburban, and exurban sprawl (cf. Bezanson 2001). After centuries of disturbance and decades of deliberate replacement of tree and grass species, only isolated examples of prehistoric and early historic vegetation communities remain today (Telfair 1999). Present-day mammal species consist primarily of cougar (*Puma concolor*), coyote (*Canis latrans*), white-tailed deer (*Odocoileus virginianus*), American badger (*Taxidea taxus*), American beaver (*Castor canadensis*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), muskrat (*Ondatra zibethicus*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), eastern cottontail rabbit (*Sylvilagus floridanus*), and fox squirrel (*Sciurus niger*). Mammals that once occupied the region include plains bison (*Bison bison*), gray (*Canis lupus*) and red wolf (*Canis lupus rufus*), black (*Ursus americanus*) and grizzly bear (*Ursus arctos horribilis*), and pronghorn

(*Antilocapra americana*). Avian species include bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaida macroura*), and a variety of songbirds. Various reptiles and amphibians are also found throughout the area.

Dominant vegetation across the Blackland Prairie consists of big bluestem (*Andropogon gerardii gerardii*), little bluestem (*Schizachyrium scoparium*), Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), brownseed paspalum (*Paspalum plicatulum*), and gramagrass (*Bouteloua gracilis*) in the uplands, and eastern cottonwood (*Populus deltoides*), bur oak (*Quercus macrocarpa*), Shumard oak (*Q. shumardii*), sycamore (*Platanus occidentalis*), bois d'arc (*Maclura pomifera*), black willow (S*alix nigra*), hackberry (*Celtis occidentalis*), elm (*Ulmus* sp.), pecan (*Carya illinoinensis*), and green ash (*Fraxinus pennsylvanica*) in bottomland forests and riparian forest corridors. Common forbs include aster (*Aster* sp.), prairie bluet (*Coenagrion angulatum*), prairie clover (*Petalostemum purpureum*), and black-eyed Susan (*Rudbeckia hirta*).

CLIMATE

The climate of the project area is humid subtropical, with mild winters and hot summers. Daytime temperatures of greater than 100 degrees Fahrenheit (ºF; 37.8º Celsius [C]) are typical during the summer months. In contrast, temperatures rarely fall below freezing during the winter. Average annual precipitation is 40 inches ([in; 102 centimeters [cm]), primarily as rainfall and typically in short periods of intense thunderstorms with peak precipitation in May and a nadir in August.

CHAPTER 3
CULTURAL CONTEXT

The proposed project area is located in what is generally referred to as the Northcentral Texas cultural area (Perttula 2004). This area encompasses northern portions of the Blackland Prairie and the adjacent Cross Timbers physiographic regions. The following chapter presents a brief synopsis, based on regional archeology, of the Native American cultural chronology and Euro-American history of the Northcentral Texas cultural area. Given the size of the region and the depth and breadth of cultural complexity that has developed in the area, this chapter must necessarily be limited in scope. Current conceptions of the prehistoric cultural chronology of Northcentral Texas, particularly within the upper Trinity River basin (Table 2), are largely based on four major reports by Peter and McGregor (1988), Prikryl (1987, 1990), and Yates and Ferring (1986). References are provided to supplement the information summarized here.

Table 2
Generalized Prehistoric Cultural Sequence for Northcentral Texas

Period	Date Ranges (B.C./A.D.)
Paleoindian	9500 B.C.–7000
Archaic	7000 B.C.– A.D. 700
Early Archaic	7000 B.C.–4000
Middle Archaic	4000 B.C.–2000
Late Archaic	2000 B.C.–A.D. 700
Late Prehistoric	A.D. 700–1600
Late Prehistoric I	A.D. 700–1200
Late Prehistoric II	A.D. 1200–1600
Protohistoric	A.D. 1600–1800
Historic Native American	A.D. 1800–1860

After Peter and McGregor (1988), Prikryl (1987, 1990), and Yates and Ferring (1986)

NATIVE AMERICAN CULTURAL CHRONOLOGY

Paleoindian

Projectile point types found in Northcentral Texas that can be associated with the early to late parts of the Paleoindian period include Clovis, Folsom, Dalton, Plainview, San Patrice, and Scottsbluff. Based on a sample of projectile points from surface sites, Prikryl (1990) has concluded that among the most common Paleoindian point types in Northcentral Texas are Plainview and Dalton. Ferring and Yates (1997) suggest that these types date to approximately 10,000–12,000 years before present (B.P.), based on cross dating with other regions. The suggested age for these types may correspond with the onset of early Holocene alluviation in the local river valleys, including the Trinity and Sabine river basins. The majority of the recorded Paleoindian sites cluster in the upper Trinity River drainage, where the most intensive archeological investigations have taken place, although these sites often consist of no more than one or two projectile points. The generally low density of Paleoindian artifacts and sites and the tendency for projectile points to be made from nonlocal lithics have led investigators to characterize these populations as highly mobile, with low regional densities (Lynott 1981:100–101).

The Paleoindian occupation of the upper Trinity River basin is known primarily through diagnostic projectile points from surface collections or from stratigraphically mixed contexts (Meltzer 1987; Meltzer and Bever 1995). The Field Ranch site (41CO10), along the upper Elm Fork Trinity River, is a prime example of typical site contexts (Jensen 1968). Interestingly, the only two investigated sites in Northcentral Texas with apparently discrete Paleoindian components, the Lewisville Lake (41DN72) and Aubrey (41DN479) sites, are early, both producing Clovis projectile points. The Lewisville Lake site contained 27 hearth features with an associated Clovis point and other sparse lithics (Crook and Harris 1957, 1958; Story 1990:182–184). Although the original radiocarbon dates on the hearths suggested an anomalously early age for Clovis points (ca. 37,000 years B.P.; Crook and Harris 1956), later work by the Smithsonian Institution (Stanford 1981) appears to have resolved the controversy concerning the date of the occupation there. Apparently, the presence of naturally occurring lignite in these hearths, either as a fuel or as an inadvertent inclusion, contaminated the radiocarbon samples. Consequently, the usually accepted age of 10,000–12,000 years B.P. (ca. 8000 B.C. to 10,000 B.C.) for Clovis period occupations is probably a reasonable estimate for the first human inhabitants of Northcentral Texas. The deeply buried Aubrey site, located on the Elm Fork Trinity River north of Dallas, yielded lithic debitage and Clovis points buried beneath 8 m (26 ft) of Holocene alluvium on the Elm Fork Trinity River floodplain (Ferring 1989, 2001). The discovery of this site suggests that well-preserved Paleoindian sites in Northcentral Texas will only be found by examining deeply stratified Holocene alluvium in modern floodplain situations.

The Lewisville Lake and Aubrey sites contained a variety of faunal remains, both large and small. The largest, white-tailed deer, can be associated comfortably with the Clovis occupation at the Lewisville Lake site. The preponderance of small game at the Aubrey site could be interpreted as representing a more generalized pattern of foraging than the reliance on mammoth and bison apparently demonstrated at other Clovis sites on the Southern Plains (Hofman 1989a:31–32). Such a divergence in subsistence patterns may reflect an inherent adaptability of Clovis technology to changing environmental conditions encountered as early populations spread southeastward into Texas (Ferring and Yates 1997).

There are no excavated and reported Paleoindian stratified components on the central Blackland Prairie itself. Nonetheless, a variety of early points has been found, largely in surface contexts, and it is clear that this part of Texas was used throughout the period from ca. 9,500 to 7,000 B.C. Presumably, this use was by hunter-gatherer groups with low population densities and high residential mobility. An analysis of materials collected by C. K. Chandler and other avocational archeologists, primarily from sites in Ellis County, identified a handful of Paleoindian projectile points typed as Clovis, Plainview, Dalton, Golondrina, and San Patrice, along with several untyped lanceolate specimens (Yedlowski et al. 1998). Other early materials from the area include a few San Patrice points from the Richland-Chambers Reservoir (McGregor and Bruseth 1987) and a cache of 23 prismatic blades from the Kevin Davis site (41NV659) in Navarro County (Young and Collins 1989).

Archaic

For Northcentral Texas, the Archaic period is tentatively dated between ca. 7000 B.C. and A.D. 700, with segments of approximately 2,500 years often considered as early, middle, and late divisions of the period (Prikryl 1993:199). Thus, the Early Archaic has been dated from 7000 to 4000 B.C., the Middle Archaic from 4000 to 2000 B.C., and the Late Archaic from 2000 B.C. to A.D. 700. Relatively recent overviews that cover the Archaic in this portion of Texas include Hofman (1989a), Prikryl (1990), and Story (1985, 1990). Diagnostic artifacts for the period are similar to those of adjacent regions, although developing a sound chronological sequence of diagnostic tool types has proven difficult because many of the investigations have focused on surface manifestations. Prikryl (1990) suggests that Early Archaic projectile points include early split-stemmed varieties and possibly Angostura, and Middle Archaic points include basal-notched forms such as Andice, Bell, and Calf Creek along with Bulverde, Carrollton, Dawson, and Wells. Late Archaic point types reportedly include Castroville, Dallas, Edgewood, Elam, Ellis, Gary, Godley, Marshall, Palmillas, Trinity, and Yarbrough (Prikryl 1990). At one time, the Carrollton and Elam foci were used to define the Middle and Late Archaic, respectively (Crook and Harris 1952, 1954). Reevaluation of the type-site artifacts, however, showed that the materials were so mixed that perpetuation of these foci provides little interpretive value (Hofman 1989a; Prikryl 1990). Some of this mixing and the generally low numbers of Early and Middle Archaic sites may be due to extensive erosion of mid-Holocene deposits, as has been documented for the Brazos River drainage west of the Dallas area in Young, Stephens, and Throckmorton counties (Ensor et al. 1992).

Though few isolable components have been analyzed for the various divisions of the Archaic period in Northcentral Texas, slowly increasing populations responding to warmer and drier environmental conditions have been postulated to explain the overall archeological record of the period (Lynott 1981; Story 1990). It is thought that these factors may have led Archaic populations of the Cross Timbers and prairie areas of Northcentral Texas to develop a diversified hunting and gathering pattern based on bottomland resources of the rivers and major creeks, whereas populations on the Rolling Plains maintained a focus on bison hunting (Hofman 1989a). Projectile points of the period were fashioned from local lithic materials (typically quartzite), suggesting that populations were less mobile than were their Paleoindian predecessors. Less mobility also may suggest refinement of the diversified subsistence pattern to include scheduling of resource use within more restricted areas. Evidence from Late Archaic sites at Joe Pool Lake (Peter and McGregor 1988) and Lake Ray Roberts (Ferring and Yates 1997) indicates repeated site occupation by small groups, which could support the resource-scheduling hypothesis. Despite refinement of resource utilization, evidence of dietary stress has been found on Late Archaic human skeletal materials (Ferring and Yates 1997; Gill-King 1987).

Mixing of components also has hampered interpretations regarding downstream Trinity River use by prehistoric peoples during the lengthy Archaic period. Because few isolable Archaic components have been excavated, particularly ones dating to the first two-thirds of the period, a comprehensive understanding of artifact chronologies, subsistence practices, or settlement strategies is lacking. A variety of projectile point styles traditionally associated with the Early and Middle Archaic periods in Central Texas—for example, Andice, Angostura, Bell, Gower, Hoxie, Martindale, Nolan, Travis, and Uvalde—were identified during analyses for the Superconducting Super Collider project (Yedlowski et al. 1998). These projectile points types are relatively scarce and do not appear to represent major occupation of this part of the Blackland Prairie. Demonstrably early points were also largely absent at the nearby Pecan Springs site (41EL11) at Bardwell Reservoir and the Strawn Creek site (41NV6) at Navarro Mills Reservoir, with a Hoxie point from Pecan Springs being the clearest example (Duffield 1963; Sorrow et al. 1966). The relatively intensive work at Richland-Chambers Reservoir suggests a similar conclusion for the western edge of the Oak Woodlands at the eastern margin of the Blackland Prairie, although it has been noted that data pertaining to the Early to Middle Archaic may be scarce in part because sites dating to this interval lie deeply buried or were removed by extensive erosion during the mid-Holocene (Fields 1995; McGregor and Bruseth 1987). Only a few radiocarbon assays predating 4,000 years B.P. were obtained, but points dated to this interval in Central Texas (for example, the Bell/Andice/Calf Creek and Hoxie types) occur at the Richland-Chambers Reservoir in only very small numbers.

A much different picture is presented for the late portion of the Archaic period, after about 2,000 B.C. All areas of the central Blackland Prairie that have been studied archeologically contain sites dating to this period, and the Late Archaic represents the earliest time for which much is known about indigenous prehistoric lifeways. Both the Pecan Springs and Strawn Creek sites on the Blackland Prairie proper yielded Late Archaic point types such as Gary, Dawson, and Yarbrough, although they tended to be mixed with materials from later occupations (Duffield 1963; Sorrow et al. 1966). The surface collections analyzed during the Superconducting Super Collider project also contained these types, as well as a number of Late Archaic types common in Central Texas—such as Bulverde, Darl, Ensor, Marcos, Marshall, Montell, and Pedernales—and a variety of probable Late Archaic forms more characteristic of the northern and eastern parts of the state such as Carrollton, Edgewood, Elam, Ellis, and Kent (Yedlowski et al. 1998). Noting the relatively high frequency of Late Archaic projectile points, Yedlowski et al. (1998) suggest an increased regional use by hunter-gatherers as a result of moister climatic conditions than before, presumably associated with greater productivity in subsistence resources. They also note that, although the projectile point evidence indicates interaction with groups living in Central Texas proper, larger proportions of points indicate affinities with eastern Texas than during the Early and Middle Archaic.

Brown and his colleagues (1987:44-22–44-26) presents similar conclusions concerning an increase in occupational intensity and increased interaction for those project areas at the eastern edge of the region (i.e., Cedar Creek Reservoir in southeastern Kaufman County and Richland-Chambers Reservoir in southeastern Navarro County). Two of the three excavated sites at Cedar Creek Reservoir have strong Late Archaic components represented by numerous Gary points and a variety of other lithic tools (Story 1965), and at least 15 sites at Richland-Chambers Reservoir have identifiable components of this age. In addition to constellations of projectile point styles (e.g., Dawson, Gary, Godley, Kent, and Yarbrough) that indicate ties more to the north and east than to the south and west, each of these areas has yielded information suggesting that ceramics may have been introduced into the material culture of local groups during the latest part of the Late Archaic, as they were across most of Texas to the east (where this interval usually is termed the Early Ceramic or Woodland period).

At Cedar Creek Reservoir, distributional data from the Lacy (41HE70) and Gossett Bottom (41KF7) sites suggest that the initial use of ceramic containers preceded introduction of the bow and arrow, although it is difficult to be certain because the sites were not well stratified and the ceramics could not be related to known early types such as Williams Plain (Story 1965). At Richland-Chambers Reservoir, distinctive shell-tempered sherds were recovered from contexts dated between A.D. 200 and 700 at the Adams Ranch site (41NV177; Bruseth and Martin 1987), apparently representing the earliest ceramic industry in this part of the Trinity River basin.

The most complete picture of the archeology of the Late Archaic for this region comes from the Oak Woodlands at the eastern margin of the Blackland Prairie. Along Richland and Chambers creeks, Late Archaic groups appear to have been hunter-gatherers whose subsistence pursuits focused on wild plant foods such as hickory nuts and prairie turnips, and faunal taxa such as deer, turtles, small mammals, birds, and fish (McGregor and Bruseth 1987). Although presumably not sedentary, these groups clearly used the area in an intensive fashion for residential purposes, and it appears that populations increased while territory sizes decreased. A conspicuous component of the record are the so-called "Wylie pits," which are large man-made depressions measuring approximately 16 m in diameter and 0.6 m in depth, excavated at the Bird Point Island (41FT201) and Adams Ranch sites. These were large features that appear to have been used for communal processing of vegetal resources (and later as cemeteries), perhaps in the context of band aggregation in "tension zones" as territories decreased in size (McGregor and Bruseth 1987).

Human burials are common in the archeological record of the Late Archaic and Late Prehistoric periods of at least the eastern part of Northcentral Texas (Prikryl 1993). Some of these burials are associated with Wylie pit features. These features were first identified at a series of sites along the East Fork of the Trinity River and were considered an important trait of the Wylie focus (Harris and Suhm 1963; Stephenson 1952; Wilson 1946). Radiocarbon assays from pits at the Upper Rockwall (41RW2) and Sister Grove Creek (41COL36) sites in the Lavon Lake area suggest that the pits and the Wylie focus were associated with the Late Prehistoric period (Lynott 1975; Ross 1966). Lynott (1977) widened the temporal span by incorporating a Late Archaic phase into the focus definition. Subsequent work on Wylie pit features at Richland-Chambers Reservoir to the south confirmed their Late Archaic age (Bruseth and Martin 1987). Nonetheless, the wide range of associated artifact types and the long time span represented by the pits made it clear that the Wylie focus was not a useful construct. Bruseth and Martin (1987), while discarding the focus as unusable, further supported Lynott's (1975) original interpretation of the pits as being associated with large-scale food processing. Their interpretation equates the pits to the burned rock middens of Central Texas, with both representing group aggregations.

Late Prehistoric

The Late Prehistoric period (ca. A.D. 700–1600) is marked by the initial appearance of arrow points. The A.D. 700 date for the beginning of this period is based upon dated contexts for similar material in the Brazos River drainage to the west. Group aggregation and large-scale manipulation of subsistence resources, as represented by the Wylie pit features and the human burials they contain, may be indicative of societal changes that continued through the Late Prehistoric period. Habitation structures indicating increased sedentism, at least in certain places and at certain times, have been found in some Late Prehistoric sites, along with cultigens such as corn, and arrow points and ceramics indicating important technological changes. Also, there may be evidence (e.g., the distinction between burials placed inside and outside Wylie pits) of differential mortuary practices

that could reflect a shift toward a hierarchical social structure, although this evidence is not nearly as strong as that for the Caddo area of northeast Texas. Both Lynott (1977) and Prikryl (1990) have proposed that the Late Prehistoric period be divided into an early and a late phase, with the early phase reflecting a continuation of the foraging subsistence system of the preceding Late Archaic period and the late phase reflecting Southern Plains influences. Evidence of horticulture and bison procurement also appears in sites of this period (Harris and Harris 1970; Morris and Morris 1970).

Prikryl's (1990, 1993) Late Prehistoric I period (A.D. 700–1200) is marked by the Alba, Bonham, Catahoula, Scallorn, and Steiner arrow point types. Ceramic vessels are mostly grog-tempered and undecorated, but some evidence indicates influences from other regions in some locally manufactured wares displaying designs similar to those associated with East Texas Caddo ceramic types. Evidence for corn and structures has been found at sites at Joe Pool Lake in western Dallas County as well as to the north at Hubert Moss Lake near the Red River (Lorrain 1969; Martin 1994; Peter and McGregor 1988). Farther west, cultural changes also were taking place on the Rolling Plains, though this area adhered to its Archaic lifestyle even after technological innovations such as the bow and arrow were accepted (Lynott 1981).

As a result of intensive excavations at the Cobb-Pool site (41DL148) at Joe Pool Lake, Peter and McGregor (1988) proposed a reformulation of the Late Prehistoric period. The Cobb-Pool site yielded house structures, roasting pits, Alba arrow points, grog-tempered ceramics, and charred corn cupules. Radiocarbon dates from several features indicate the site was occupied during the late twelfth or early thirteenth century. Present evidence suggests that the site does not represent an intrusive Caddo occupation; consequently, a significant adaptive change appears to have occurred, in at least some areas, during a middle phase of the Late Prehistoric period. It is also likely that ceramics were not introduced to the region before this time.

Concerning the Late Prehistoric components investigated at Lake Ray Roberts, Ferring and Yates (1997:305) summarize the results of that research as follows:

> Late Prehistoric II occupations are characterized by multiple, short-term use of probably logistic sites which lack ceramics and architecture. The architectural remains at 41DN102 are the only ones in the project area. At best, this was a small hamlet, occupied ca. 500–650 yr. B.P. No evidence of horticulture was recovered, and the [Late Prehistoric II] fauna indicate a foraging strategy that emphasized deer procurement and occasionally bison as well. Transport and curation of chert raw materials was about as frequent as in the [Late Archaic], and long-distance raw material acquisition (e.g., Edwards, Alibates) is not evidenced. Ceramic traditions are dominated by locally produced shell-tempered wares, which by this time were being produced in the Southern Plains region generally. As recorded by previous synthesis (Story 1990) little if any interaction with the Caddoan area is indicated. Thus, the Ray Roberts prehistoric data suggest that regional traditions emerged at the end of the [Late Prehistoric] period largely independent of the Plains or East Texas Woodlands.

More recently, McGregor (personal communication 1999) has argued strongly for a "middle subperiod" of the Late Prehistoric that he dates between A.D. 1000 and 1350. He believes that arrow points with straight or rectangular stems are most diagnostic of this period and identifies three sites or site areas with relatively isolable (or minimally mixed) components of this middle subperiod—the Cobb-Pool site, Area B at the McDonald site (41HI105) on Hackberry Creek within the middle Brazos River drainage, and Area F at the Haley's Point site (34MA15) on the Red River in Oklahoma (Brown et al. 1987; Peter and McGregor 1988; Rohn 1998). McGregor also notes that maize is common at Haley's Point, as it is at Cobb-Pool, and suggests that these sites are

representative of a relatively short-lived, region-wide subsistence pattern involving a partial dependence on agriculture during this middle subperiod (McGregor, personal communication 1999).

Sites dating to the Late Prehistoric period broadly defined, in other words after ca. A.D. 700, also are common downstream on the Trinity area of the Blackland Prairie. The collections studied during the Superconducting Super Collider project contain substantial numbers of both early (e.g., Alba, Bonham, Catahoula, Colbert, Scallorn, and Steiner) and late (e.g., Cliffton and Perdiz) arrow points, but Yedlowski et al. (1998) note that early arrow points are more frequent, perhaps reflecting high population densities continuing from the Late Archaic period. Other than the Perdiz and Scallorn types, which have such widespread distributions, the arrow styles point to the east and north. The limited ceramic samples, containing sherds reminiscent of types such as Weches Fingernail Impressed, Killough Pinched, Maydelle Incised, and Poynor Engraved, also support interaction with Caddo groups to the east (Yedlowski et al. 1998). The Strawn Creek site at Navarro Mills Reservoir presents a similar picture, with most of the typed arrow points dating to the first half of the Late Prehistoric period and the more distinctive ceramics in the small collection relating to the early Caddo types, Crockett Curvilinear Incised and Weches Fingernail Impressed (Duffield 1963). The Pecan Springs site at Bardwell Reservoir also yielded numerous early arrow points, as well as a respectable number of Perdiz points, along with a small collection of highly fragmented ceramics (Sorrow et al. 1966).

Three sites excavated at Cedar Creek Reservoir contained Late Prehistoric components, although materials of this age were common only at the Gossett Bottom and Lacy sites (Story 1965). Early arrow point forms (e.g., Alba, Catahoula, Friley, Granbury, Scallorn, and Steiner) are better represented than late ones (e.g., Cliffton and Perdiz), but not in significant amounts. Not surprisingly, ceramics are more frequent in this area than to the west and clearly are related to the Caddo tradition to the east and northeast; some of the more distinctive decorated sherds were considered reminiscent of types such as Canton Incised, Killough Pinched, and Ripley or Wilder Engraved (Story 1965). The faunal remains, many of which probably relate to Late Prehistoric occupations, from the Gossett Bottom and Lacy sites consist predominantly of deer, turtle, and small mammals, with bison occurring only in small numbers. Based on the feature evidence (or lack thereof), it appears that this part of the Trinity River basin was occupied by mobile hunter-gatherers rather than sedentary groups during the Late Prehistoric period.

Some of the best data concerning Native American use of the region during the Late Prehistoric period is from Richland-Chambers Reservoir. Sites dating to this interval are common at the reservoir, especially for the early half of the period, and it appears that there was a significant decline in population densities after about A.D. 1300 (McGregor and Bruseth 1987). The data suggest that most of the excavated sites with Late Prehistoric components were used for residential purposes (McGregor and Bruseth 1987), although there are some sites, for example the stream-side concentrations of mussel shells and artifacts at 41FT193 and 41NV139, that probably were used in a more limited fashion as resource extraction camps. The structural patterns at the Bird Point Island site indicate intensive use by sedentary hunter-gatherers during the early Late Prehistoric period. Conversely, investigations of other generally contemporaneous components at nearby sites (e.g., Bird Point Island, Adams Ranch, Irvine [41NV182], and Little Cedar Creek [41NV173]) have yielded middens and numerous features suggesting intensive use but lack house structures, possibly indicating seasonal occupation of these sites. Macrobotanical remains primarily point to the use of wild plant foods such as hardwood nuts, a variety of seeds, and tubers/rhizomes (McGregor and Bruseth 1987). The only tropical cultigen is maize, and it occurs in very small quantities and only

in contexts dating to the last half of the period. Hence, groups who lived in this area were predominantly hunters and gatherers. The arrow points that characterize the early (Alba, Scallorn, and Steiner) and late (Perdiz and Cliffton) parts of the period are the same styles found elsewhere across the area, and it appears that Gary dart points may have continued to be used through the early Late Prehistoric (McGregor and Bruseth 1987:183). Ceramics are moderately common and clearly relate to Caddo wares, with most of the identified types (e.g., Maydelle Incised, Poynor Engraved, and Weches Fingernail Impressed) indicating contact with groups in the Neches River drainage, east of the Trinity River.

During the Late Prehistoric II period (A.D. 1200–1600), influences from the Southern Plains became pronounced in the Cross Timbers and prairie areas. These influences coincided with an increase in bison herd size in Northcentral Texas (Lynott 1981; Prikryl 1990). Bison was important to subsistence, but shrinking procurement territory sizes due to population increases continued the trend toward horticulture and settled village life (Harris and Harris 1970; Morris and Morris 1970). In terms of technology, a Plains Indian tool assemblage was common (Prikryl 1990). Items associated with this assemblage include calcareous-tempered ceramic vessels, some of which fit the description for the type Nocona Plain (shell-tempered), and triangular arrow points such as Fresno, Harrell, Maud, Perdiz, and Washita points. Tools specific to bison processing include snub-nosed or thumbnail scrapers and edge-beveled Harahey knives. Bison scapula hoes, which also are common in Plains Indian sites, have been recovered from sites in the Lewisville Lake and Lavon Lake areas of Denton and Collin counties (Barber 1969; Harris 1945).

The Plains Indian influences associated with settled village life were used to define the now outmoded Henrietta complex of Northcentral Texas. This complex, based on Krieger's (1946) more expansive Henrietta focus, extends from the Red River south along the headwaters of the Trinity and Brazos rivers. The type-site, M. D. Harrell (41YN1), is located along the Brazos River in Young County just northwest of Palo Pinto County in the drainage basin now inundated by Possum Kingdom Reservoir (Krieger 1946). The Harrell site and other associated sites contain middens, house structures, rock hearths, storage pits, and burials, and they most often are located on sandy knolls or terraces overlooking river valleys (Brooks 1989; Forrester 1994). Excavated sites attributed to the Henrietta complex include the Glass (41MU24) and Coyote (41MU28) sites located on the Red River in Montague County (Lorrain 1967; Woodall 1967a), and it is clear that sites such as Dillard (41CO174) in Cooke County are related as well (Martin 1994).

The Henrietta complex as an investigative tool can be limiting since its loose definition tends to obscure local differences. More recent investigations in the upper Trinity River drainage have tended to highlight the local differences. At Lake Ray Roberts, for instance, Ferring and Yates (1997) see local trends emerging independent of extraregional influences. They cite the lack of evidence for extensive maize horticulture and the preponderance of short-term logistical camps as the basis of their hypothesis. Similarly, Peter and McGregor (1988) demonstrated that occupation of the Mountain Creek drainage was less intensive in the Late Prehistoric II period than before and evidence of the practice of maize horticulture is limited. The adaptation developing in Northcentral Texas after A.D. 1200 was truly distinctive from the Plains adaptations revealed to the northwest in Foard County (Peter et al. 1997).

Protohistoric/Historic Native American

The cultural divergences between Northcentral and Northeast Texas that began in the Archaic period continued into the Protohistoric and historic periods. Various sociological factors, primarily the colonization of New Mexico by the Spanish, caused drastic changes in the cultural makeup of Northcentral Texas, as groups from elsewhere migrated into the area and existing groups were forced to adapt to their presence. Meanwhile, Caddo groups continued to dominate the Northeastern portion of the state, although significant changes were also occurring there.

Prior to Spanish settlement of New Mexico in 1598, European presence in Texas was limited and sporadic. After 1598 however, Spanish influence was never absent from the Southern Plains. Although actual native contact with Europeans continued to be limited, and only brief records of Spanish journeys into or through the North Texas area exist (Hofman 1989b; John 1975).

By the eighteenth century, immigrant Plains Indian groups had moved into and beyond North Texas, and their documentation by traders and explorers marks the start of the historic period (A.D. 1600–1860; Prikryl 1993). Unfortunately, because reliable historical documentation is very sparse for the upper Trinity River basin during the early historic period, it is not clear which specific aboriginal groups were residing in the present-day region at the beginning of this period. Clearly, the early native historic era in North Texas was a time of population fluctuation, movement, and amalgamation (see Newcomb 1993).

Documentary sources suggest that the Tonkawa, Apache, Comanche, Wichita, Kitsai, Yojaune, Caddo, Delaware, and Kickapoo traversed the region at various times during the period (Campbell 1983; Newcomb 1961; Newcomb and Campbell 1982). Prior to about A.D. 1725–1750, Apachean groups appear to have dominated the western portion of the Southern Plains, known as the High Plains. After that time, the area was increasingly controlled by the Comanche and Kiowa. On the eastern portion of the Southern Plains, within the area now known as the Lower Plains and Northcentral Texas, the Wichita tribes became dominant (Bell et al. 1967; Hofman 1989b:91).

Available data suggest that many of the aboriginal occupants of the eastern margin of the Great Plains, including North Texas, were Caddo language speakers, from the Arikara in the north to the Wichita and Kichai in the south. In this light, it is worth noting that it has also been suggested that the Socoatino, encountered by the survivors of the Hernando de Soto expedition in the sixteenth century, were Caddo speakers and were the same as the Canohatino, identified by the French in the latter part of the seventeenth century, apparently located at that time "on the Blackland Prairies between the Guadalupe and Trinity rivers to the east of present-day San Antonio, Austin, and Waco" (Newcomb 1993:24). However, if the prehistoric occupants of the eastern margin of the plains in Texas were indeed Caddo speakers, it would explain how they were absorbed very early by other Caddoan-speaking groups (such as the Yojuane, Kichai, Tawakoni, Taovaya, Iscani, and Wichita proper) who arrived in Northcentral Texas in the late seventeenth and early eighteenth centuries. Most of these groups, in turn, amalgamated to form the historic period Wichita Tribe. Some, however, were probably absorbed by the united Caddo tribes, and some may even have joined amalgamations of a variety of groups, such as the Tonkawa, during the late eighteenth and early nineteenth centuries.

The term "Wichita" is commonly used to refer to a group of linguistically related tribes, including the Wichita, Taovaya, Tawakoni, Iscani, Waco, and Kichai. Many of these groups apparently entered the Southern Plains in the seventeenth century, probably from Kansas and southern

Nebraska, to escape the hostilities of the Osage (Webb and Carroll 1952:2:904). The Wichita were true Plains Villagers, with an economy that was jointly dependent upon agriculture and bison hunting. They occupied permanent villages of beehive-shaped, grass houses, from which they conducted semi-nomadic bison hunts. In 1719, their villages were located along the Arkansas River in northern Oklahoma (Hofman 1989b:95). By 1750, they had moved some of their villages to southern Oklahoma, along the Red River. Others were located on the upper end of the Sabine and Neches rivers in Texas and subsequently on the middle Trinity and upper Brazos rivers. In 1759, the Taovaya village on the Red River was attacked by Diego Ortiz Parrilla, but was successfully defended. In 1772, the year the Taovaya concluded a nominal peace with the Spanish, one of their villages was on the Salt Fork of the Brazos, on the Lower Plains west of present-day Dallas/Fort Worth (John 1975:Map 3; Webb and Carroll 1952:2:705). Wichita groups were included in treaties made with the Republic of Texas in 1843 and with the United States in 1837 and 1856 (Webb and Carroll 1952:2:709). In Texas, they continued to live between the upper Brazos and Trinity rivers until 1855. In that year, the Tawakoni and Waco were placed on the Brazos Indian Reservation, south of Fort Belknap, in company with a number of other Native American remnant groups (Smith 1996; Webb and Carroll 1952:1:212, 2:905). Subsequently, as a result of increasing animosity from white settlers, they were removed to Indian Territory (present-day Oklahoma) in 1859 (Smith 1996; Webb and Carroll 1952:1:210). The remnants of the Wichita moved to Kansas during the Civil War, but returned to Oklahoma after the war to settle permanently near present-day Anadarko (Hofman 1989b:95).

Although archeological sites that can be associated definitely with various historic period groups are few, sites attributable to the historic period Wichita have been identified at the edges of Northcentral Texas. Among these was the Stansbury site (41HI9) located in Hill County, but now inundated by Lake Whitney (Stephenson 1970). Excavations at the site produced burials, house structures, storage pits, and a variety of aboriginal artifacts along with European ceramics, glass beads, metal arrow points, and flintlock musket parts. A cluster of Wichita sites also occurs to the north along the Red River in Montague County. These sites are known collectively as "Spanish Fort" and occur on both the Oklahoma and Texas sides of the river. Woodall (1967b) excavated one of these sites, the Upper Tucker site (41MU17). The site produced artifacts and features similar to those discovered at the Stansbury site. Wichita sites on both the Brazos and Red rivers were located atop high terraces overlooking the rivers. Within the upper Trinity River basin, little evidence of these historic period Indian groups has been found, with the exception of a few Native American sites with European items (Sollberger 1953).

At the beginning of the nineteenth century, the physical presence of Europeans on the Southern Plains became commonplace. This was the result of increasingly peaceful relations between the Spanish in Texas and the Plains Indians to the north, and the acquisition of the Louisiana Territory by the United States in 1803.

HISTORIC PERIOD CHRONOLOGY

The initial European penetration into the general area of North Texas occurred in the middle of the sixteenth century (around 1542) when the survivors of the Hernando de Soto entrada, led by Luís de Moscoso de Alvarado, entered Texas in their attempt to reach New Spain by land (Bruseth and Kenmotsu 1991; Weddle 1985). Moscoso's exact route is unknown, but archeological studies indicate that he apparently traversed the Red River valley somewhere between present-day Shreveport, Louisiana, and Texarkana, Texas. The party crossed the Red River and journeyed

through Northcentral Texas to present-day Wichita Falls before returning to the Mississippi River to travel to the Gulf of Mexico. Recent reconstructions of the Moscoso route through Texas (Bruseth and Kenmotsu 1991) equate the province of "Naguatex" with the Hatchel-Mitchell-Moore site complex in northern Bowie County, suggesting that from here the entrada moved southwest through current Bowie County to cross the Sulphur River somewhere in the vicinity of present-day Douglassville, where Wright Patman Lake is located.

In the late 1600s, the Spanish introduced the first of their missions into East Texas. The goal of these missions was to eradicate the indigenous religions and to Christianize the native populations. In 1690 the Spanish established missions—San Francisco de los Tejas and Santísimo Nombre de María—in the Hasinai area but abandoned them in 1693 when the local population refused to comply with Spanish attempts to convert and control them (Swanton 1942:46–49).

The French, led by René Robert Cavelier, Sieur de La Salle, first intruded into eastern Texas by establishing Fort Saint Louis on the Texas coast in 1685 (John 1975:182), and in 1714 Juchereau de St. Denis set up a trading post at Natchitoches (in present-day Louisiana). Spanish fear of an increased French presence in Texas led to the decision in 1716 to try again to establish a series of missions and presidios in East Texas—this time a second Mission San Francisco de los Tejas near the Neches River, Nuestra Señora de la Purísima Concepción (later moved to the San Antonio area in 1731) on the Angelina River, the Nuestra Señora de Guadalupe at present-day Nacogdoches, San Jose de los Nazonis in present-day Nacogdoches County, and Nuestra Señora de los Ais near present-day San Augustine, as well as San Miguel de Lineares de los Adaes in present-day Louisiana—as a buffer against further French encroachment into that region (Cooper et al. 2003; Pool 1975:28; Swanton 1942:46–49). When France and Spain went to war, the French at Natchitoches attacked the Spanish settlement of Los Adaes, forcing the Spanish to abandon the area once again (Newcomb 1961:288). After the truce in 1721, the Spanish representative Marques de Aguayo persuaded the French to withdraw from Texas. He reestablished the missions and set Los Adaes as the capital of the Province of Texas. After briefly regaining control of the area, the French sold it as part of the Louisiana Purchase in 1803.

In the Red River area, the French established Le Poste des Cadodaquious in present-day Bowie County in 1719 and explored what is now Franklin County (Harper 2002). Bénard de la Harpe's 1719 trading post (which became known as the Nassonite Post) on the Red River north of present-day Texarkana was the first European settlement in the Great Bend (Cooper et al. 2003; Kelley and Coxe 1996:21). Another effort by Spain to curb French influence occurred in 1760, when Fray José Francisco de Calahorra y Saenz led an expedition to present-day Rains County to make peace with the Native American tribes in Northcentral Texas. These trading posts eventually served as illicit trading centers between the two European colonies: modern-day archeological investigations have yielded artifacts of both Spanish and French origin that would suggest that the different cultures interacted at the trading sites.

Following the sale of Louisiana to the United States in 1803, Anglo-American immigration into North Texas intensified, although for a number of years it was not clear who actually owned the area south of the Red River. The United States considered the area (and indeed, most of Texas) to be part of the Louisiana Purchase and encouraged settlement of the area (Chandler and Howe 1939). Spain (and later Mexico), on the other hand, was violently opposed to this view, and at several times during the first few decades of the nineteenth century, the dispute nearly led to war (Smith 1991). The first official Anglo-American penetration of the region was by the 1806 Freeman-Custis Expedition, which was turned back at Spanish Bluffs, along the Red River, by a Spanish military force (Flores 1984).

Despite Spain's claim, North Texas was too close to the United States not to fall into the Anglo-American sphere of influence, and settlement continued. The earliest settlements were confined to the areas immediately adjacent to the Red River, but after 1818, settlement pushed into the prairies along river tributaries and early roads such as Trammel's Trace and Dayton's Road. Trammel's Trace, a popular immigrant route into Texas after 1813, crossed the Sulphur River at Epperson's Ferry and continued southwestward through Cass County to Hughes Springs, founded in 1839, and then south to cross Cypress Creek 2 miles west of modern-day Jefferson (Webb and Carroll 1952:2:793–794). Dayton's Road was a major east–west overland route that ran along the divide between the Sulphur and Red rivers.

The original Anglo-American settlers in Texas were largely subsistence farmers residing on small holdings, with an economy based on grain and livestock production (Peter and Cliff 1990:36). The commercial production of cotton apparently was not introduced until the 1830s (Fehrenbach 1968), a shift that was accompanied by increasing numbers of slaves in the region. The town of Jefferson, on Cypress Creek, was a major cotton market, and the antebellum planters throughout the region undoubtedly sent their cotton there for sale (Peter and Cliff 1990:39). Other major industries established about the same time included tanning yards and syrup mills. After 1857, railroad construction also progressed westward (Webb and Carroll 1952:1:198, 2:59).

As settlers began to move into Texas, they remained under first Spanish and then under Mexican control until the struggle for Texas independence in 1836. For the most part, North Texas was beyond the direct sphere of the conflict involving the fight for Texas independence: that conflict played out primarily in South and Central Texas in 1835 and 1836. The most significant change thereafter involved decrees by President Mirabeau Lamar, the second president of Texas, to make the settlers of the Texas Republic safe from marauding Native Americans by adopting an Indian removal or extermination program. Active efforts to drive off or exterminate the Native Americans in North Texas had been under way for some time. In one instance in 1837, a group of Texas Rangers under the command of Lieutenant A. B. Van Benthuysen camped on Turtle Creek after conducting raids on Indians to the north (Maxwell 2008). Subsequently, many native groups who used the Trinity River basin relocated north of the Red River.

Texas traded its independence for statehood in 1846, entering the Union as the twenty-eighth state, but did not remain a U.S. state for long. Sectarian politics were raised to a fever pitch during that period, and after the presidential election of 1860, Texans began to consider secession. The sympathies of most of the Anglo-American residents of North Texas lay with the secessionist southerners because of several reasons: a majority of them had immigrated from the South, the region as a whole had a substantial slave population, and the cash economy of the area was built on slave-based agriculture, even though most of the individual farmers could not afford to own slaves. In most of Northeast and Northcentral Texas, anti-Union feelings ran high (Webb and Carroll 1952:1:306). Although some counties (e.g., Delta) did support Sam Houston's Unionist forces during the early part of the war, Texas eventually declared secession from the United Sates on February 1, 1861, and became a part of the Confederate States of America on March 2, 1861 (McCroskey 1997).

Although the fighting never reached North Texas, the Civil War still inflicted hardships on the region (Works Projects Administration [WPA] 1992:55–58). The war made it difficult to import manufactured goods into the region, and the economic woes of the Confederacy led to such severe inflation that residents could not purchase products even when they were available. In addition, the withdrawal of fighting men from the region contributed to the eastward retreat of the frontier

because of increasing fears of Native American attacks (Maxwell 2008). Simultaneously, the region also experienced considerable immigration of Southerners who were moving west to escape the warfare that ravaged the Deep South. The region gradually became impoverished when food and other commodities became more expensive and difficult to obtain as the war progressed (WPA 1992:55–58).

The state re-entered the Union in 1865, and railroad networks began changing economic relationships throughout the state. After 1870, the population of North Texas began to increase, and the region began to recover from the worst effects of the war and recession. One of the most important factors in this recovery was the increasing role of the railroad in the regional economy. A small amount of railroad construction had occurred prior to the outbreak of the war, when more than 50 miles of track had been laid westward from Texarkana in 1857 by the Memphis, El Paso, and Pacific Railroad. After a postwar hiatus of four years, construction resumed at a steady rate for the next several decades. In the area around Dallas, where the railroads arrived in 1872 with the opening of the north–south Houston and Texas Central, the new transportation network brought changes in land use, the economy, and community development. One year later, the Texas and Pacific Railway, running east–west, intersected with the Houston and Texas Central. The railroads enabled long-distance export of local agricultural products while bringing in building supplies and mechanized farm implements to county residents, thus promoting both rural and town economies. The railroads also had dramatic effects on land use, community development, and demographics, driving the establishment and abandonment of towns around the state (Maxwell 2008). The town of Garland was established in 1887 when a post office was established between the railroad towns of Duck Creek and Embree (Maxwell 2010).

After the introduction of the railroad, cotton and wheat production formed the backbone of agriculture (Odom 2001), but other crops included hay, corn, oats, and sugar. By 1910 a majority of farmers were tenants (Green 1977:Table 8.16), many of whom were trapped in a cycle of debt to the landowners (Ferring and Reese 1982). Manufacturing, however, was taking hold, shifting the economy of the Dallas area away from agriculture; by 1920, 492 manufacturing plants employed nearly 9,000 people. At that time, 70 percent of Dallas County's population resided in Dallas, Oak Cliff, Carrollton, Lancaster, Garland, Grand Prairie, Mesquite, and Richardson (Maxwell 2008). By the mid-twentieth century, Garland had become a major residential and light industrial community.

CHAPTER 4
PREVIOUS INVESTIGATIONS AND METHODS

This cultural resources survey was designed to identify prehistoric and historic archeological remains and architectural resources located within the proposed project area and to provide information necessary to address the potential for adverse effects on those cultural resources by the proposed project. This investigation consisted of background and archival research, visual pedestrian reconnaissance survey, mechanical excavation of trenches in previously undisturbed portions of the project area, and controlled excavations within the portion of prehistoric archeological site 41DL203 that coincides with the APE.

PREVIOUS INVESTIGATIONS NEAR THE PROJECT AREA

The Texas Archeological Sites Atlas online database maintained by the THC was reviewed and background research was conducted to determine previous cultural resources survey efforts and the locations of previously recorded historic and archeological resources in the immediate vicinity of the project area. One academic survey, three professional cultural resources management surveys, and an NRHP-testing and data recovery excavation have been conducted within a 1.6-km (1-mi) radius of the project area (Figure 3). In the 1980s, archeologists from Southern Methodist University identified prehistoric archeological site 41DL203 when archeological materials and human remains were found eroding from the channelized bank of Rowlett Creek. In 1982, a total of 289.4 acres in the vicinity was surveyed for the Dallas County Open Space Program. Although a report was written, it was not available for review; thus, additional information regarding the six archeological sites recorded during the survey, as well as the NRHP-eligibility of those sites is unavailable, and no associated site forms are on file at TARL. A survey for the City of Garland's expansion of a sanitary landfill was conducted in 1985. The 30-acre area encompassed a former gravel quarry and no cultural resources were identified (Lee 1985). A Texas Department of Transportation-sponsored survey in 2006 by Hicks and Company for the eastern extension of the George Bush Turnpike revisited previously recorded site 41DL203 (Feit and Stotts 2006). The site, located approximately 400 m (0.25 mi) north of Pleasant Valley Road, had been originally recorded by Southern Methodist University in the 1980s when human remains were found eroding from the channelized bank of Rowlett Creek. Feit and Stotts (2006) revisited the site and expanded its boundary when and mechanically excavated trenches exposed mussel shell, faunal bone, burned

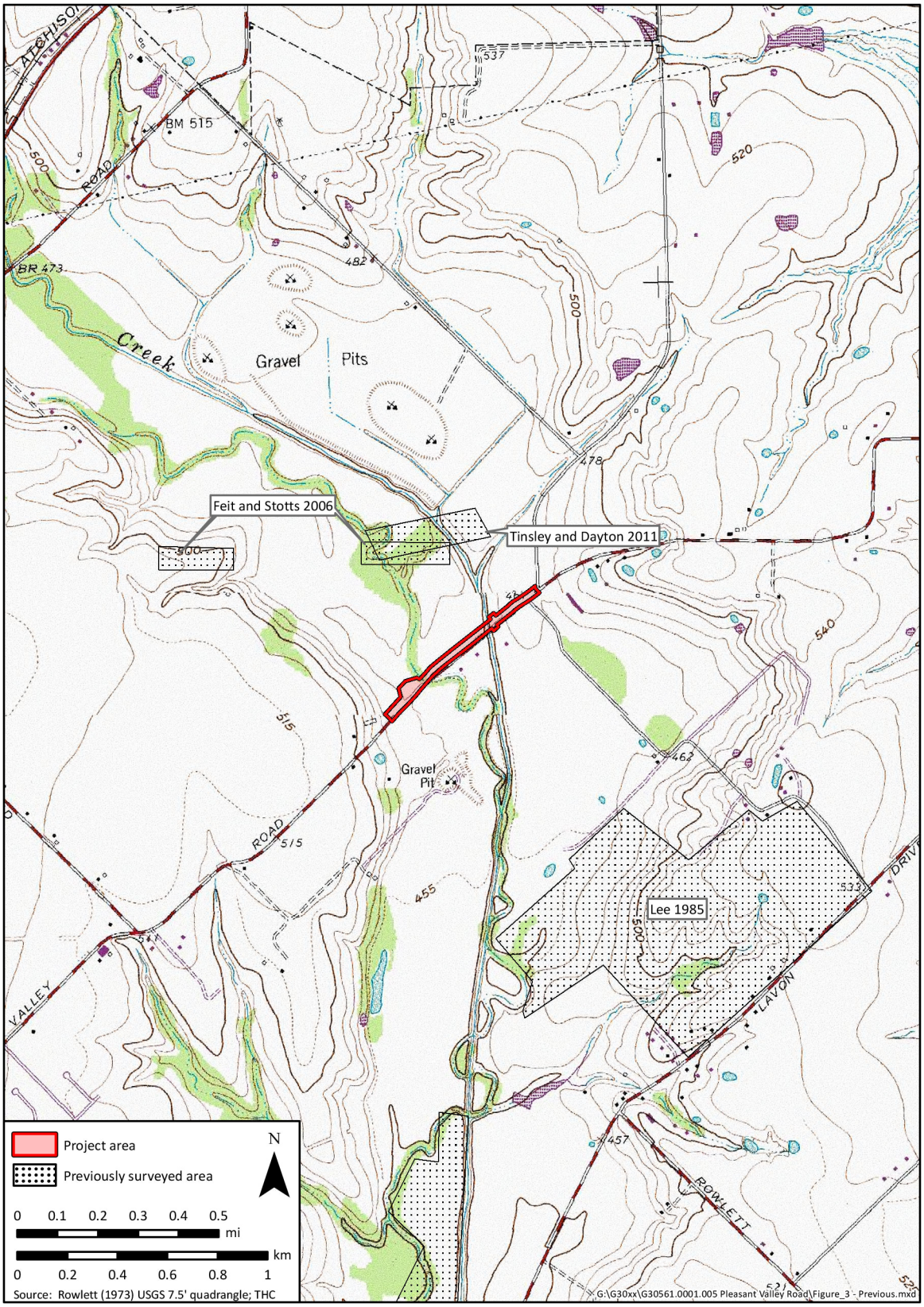

Figure 3. Prior surveys in the vicinity of the project area.

clay, and charcoal in two stratified zones. The site was recommended for further NRHP-evaluation, which was conducted by Geo-Marine, Inc. (now Versar, Inc.), in 2008 (Tinsley and Dayton 2011). The site was recommended eligible for inclusion in the NRHP and a data-recovery mitigation was conducted by Geo-Marine, Inc., in 2009 (Tinsley and Dayton 2011).

METHODOLOGY

Archival Methods

Information regarding previously recorded archeological sites was gathered through a review of the Texas Archeological Sites Atlas online database maintained by the THC and a thorough literature review. Prior to field investigations at the proposed project area, a suite of archival sources including historic aerial photographs and maps was reviewed to determine the former locations of historic-age structures within the project area.

Survey Methods

An architectural historian conducted visual reconnaissance throughout the entire project area to locate and document historic-period structural resources. Due to the potential for intact and deeply buried prehistoric cultural deposits within the Rowlett Creek floodplain environment, mechanically excavated trenches were systematically excavated along the APE during this cultural resources survey. All of the trenches were excavated with a trackhoe bucket that measured 1.2 m (3.9 ft) in width. For safety concerns, the trenches were excavated in two-bucket widths (approximately 2.4 m [8 ft]) and were approximately 6–7 m (19.7–23 ft) in length at the surface. The second bucket width was excavated to a depth of approximately 1.2 m (4 ft) and was ramped to the surface to provide a stable platform to examine the upper portion of the trench profile. Originally, the excavated depth of all trenches was planned to be 4.5 m (14.8 ft) below the ground surface. However, saturated sediments and water infiltration encountered at a depth of approximately 4 m (13.1 ft) in each trench prevented further excavation. During excavation, samples of excavated soil were screened through a 0.63-cm (0.25-inch) hardware mesh in order to identify cultural materials that might not be readily visible in the excavated fill. The trench walls were inspected from the surface and photographed, and approximate depths of specific stratigraphic zones were recorded. The physical properties of the deposits were described in general accordance with Schoeneberger et al. (2002) and Birkeland (1999). Trenches were only entered on the benched platform for safety concerns. As a result, with the exception of the upper portion of the profile, trench walls were not cleaned with a shovel or trowel prior to their recording. Accordingly, the specific vertical extent and boundary conditions of the lower subsoil zones are considered approximate values. The location and orientation of each trench was recorded with a submeter-accurate Trimble® GeoXH™ global positioning system (GPS) unit. Each trench was backfilled upon completion of the recording process. Soil exposed in the cutbanks of the creek channels was also inspected for evidence of buried cultural materials.

To more adequately evaluate the NRHP-eligibility of the portion of site 41DL203 that coincides with the APE, two hand-excavated test units were placed adjacent to previously excavated trench locations where artifact densities were determined to be the highest. The historic alluvial overburden was mechanically striped to the depths at which artifacts were previously encountered

in the adjacent trenches. The test units each measured 1 square meter (m^2) and were hand-excavated in 10-cm levels. Excavated fill was passed through 0.63-cm (0.25-inch) hardware mesh to facilitate artifact recovery.

Artifact Treatment and Analysis

All cultural material recovered during this investigation was returned to the Versar Cultural Resources Laboratory facilities in Plano, Texas, to be washed, weighed, counted, catalogued, and labeled in compliance with TARL curation standards. Context and attribute data for all materials were recorded in a Microsoft® Access™ database. The main categories of material recovered were faunal remains (animal bone and mollusk shells), burned or baked clay masses, chipped stone lithics, fire-cracked rock, and botanical samples (both flotation samples and opportunistically-collected wood charcoal). The following discussion describes analytical strategies and summarizes the attributes recorded during the analysis of each class of material. All artifacts and records generated by this cultural resources survey will be permanently curated at TARL in Austin.

Fire-Cracked Rock

Thermally altered or fire-cracked rock was sorted into classes based on rock material type (e.g., sandstone, limestone, quartzite), and the cumulative weight of fire-cracked rock fragments within each class from each archeological context was recorded.

Burned Clay

Burned or baked clay consists of irregular, gravel-sized masses of hardened clay or silty clay, many with evidence of oxidation, reduction, or smudging due to fire. A basic analysis of these masses was performed; including separation by the presence or absence of plant impressions and recording the cumulative weight of burned clay masses within each class and within each context.

Chipped Lithics

Chipped lithic artifacts identified in the assemblage consisted of chipped stone tools, cores, and debitage (the waste material from stone tool manufacture and maintenance). All tools were identified, when possible, to a type or style defined for the Northcentral Texas region. Standard variables (length, width, thickness, and raw material type) were recorded for each tool. A mass analysis strategy was employed in the analysis of the unmodified lithic debitage. Mass analysis involves the separation of the debitage from each provenience into raw material categories (i.e., quartzite, silicified wood, chert). The debitage representing each raw material category from each provenience was divided into four size classes (< 1 inch, 0.99–0.5 inch, 0.49–0.25 inch, and < 0.25 inch). The debitage within each size class was further subdivided into groups based on the percent of cortex retained on the dorsal surface, and each of these was further divided into subgroups based on the presence or absence of thermal alteration.

Botanical Remains

The few botanical remains collected during this investigation consist of opportunistically collected wood charcoal encountered during excavation of the two test units and a single flotation sample taken from an artifact concentration encountered in one of the test units. A standard flotation apparatus with upward water flow—sometimes referred to as a Siraf system—was employed to separate materials of interest from the extraneous matrix. The light fraction—i.e., carbonized vegetation and other buoyant objects filtered from the water surface—was dried and visually sorted to remove uncarbonized botanical material (primarily fine roots). The heavy fraction—i.e., nonbuoyant materials that settled to the bottom of the apparatus—was dried, visually sorted into material classes (fire-cracked rock, lithics, faunal remains, botanical remains, etc.), and integrated into the corresponding collections from the excavations.

Faunal Remains

Measures of differential preservation (i.e., taphonomy) were carried out on the faunal assemblage as a whole in order to assess human verses natural modifications to bone surfaces. An effort was made to identify bone fragments to the most specific taxonomic level possible. Bone specimens not bearing diagnostic features but similar in size and other formal characteristics were placed within specific size classes: small terrestrial mammal (STM), medium terrestrial mammal (MTM), large terrestrial mammal (LTM), and very large terrestrial mammal (VLTM). Assessments were also made of the following characteristics: bone element, size/weight of fragment, fusion state, rodent gnawing, burning/butchery evidence, and number of identifiable specimens (NISP).

Molluscan specimens were counted using two quantitative units: number of specimens (NSP; [identified and unidentified]) and NISP. Because samples were small, minimum number of individuals (MNI) was not calculated. All attempts were made to identify specimens to taxon and element. Small freshwater and land snail shells, which are ubiquitous at floodplain archeological sites in Texas, were noted in excavation records but not collected.

ELIGIBILITY CRITERIA

National Register of Historic Places

The assessment of significance of a cultural resources property is based on federal guidelines and regulations. The criteria (36 CFR Part 60.4 [a–d]) for evaluating properties for inclusion in the National Register are codified under the authority of the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation has set forth guidelines to use in determining site eligibility. Based on Advisory Council guidelines, any resource that is included in or eligible for inclusion in the National Register is a "historic property," and based on federal regulations, "[t]he term 'eligible for inclusion in the National Register' includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria" (36 CFR §800.2[e]). Subsequent to the identification of relevant historical themes and related research questions, the following four criteria for eligibility are applied:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association and

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
(b) that are associated with the lives of persons significant in our past; or
(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
(d) that have yielded or may be likely to yield, information important in prehistory or history [36 CFR Part 60.4(a–d)].

The principal research objective is to determine whether a cultural resources property possesses the potential to contribute to one or more of the above-defined criteria. Adequate information regarding site function, context, and chronological placement from both archeological and, if appropriate, historical perspectives is essential for cultural resources investigations. Because research questions vary as a result of geography, temporal period, and project design, determination of site context and chronological placement of cultural properties is a particularly important objective during the inventory and evaluation processes. Criterion D is generally associated with archeological sites, usually prehistoric but also historic-era. Criteria A, B, and C reflect association with historic-era resources, rarely with prehistoric sites. The objective of the current project was to locate and define both horizontally and vertically any cultural resources, document and describe those resources, and then, when adequate data were present, evaluate each for NRHP eligibility.

State Antiquities Landmark

For purposes of implementing the Antiquities Code of Texas, the THC is the statutorily created body responsible for protecting and preserving State Antiquities Landmarks under the Texas Natural Resources Code, Title 9, Chapter 191. A State Antiquities Landmark (SAL) is an archeological site, archeological collection, ruin, building, structure, cultural landscape, site, engineering feature, monument or other object, or district that is eligible to be designated as a landmark or is already officially designated as a landmark. The State of Texas considers all publicly owned archeological sites and historic buildings and structures to have some intrinsic historic value, and the Antiquities Code provides some level of protection for those sites, buildings, or structures regardless of their size, character, or ability to currently yield data that will contribute important information on the history or prehistory of Texas. Additionally, these publicly owned archeological sites and historic buildings and structures are protected from vandalism, or other actions meant to take, alter, or destroy them, and information directly related to the specific location of archeological sites is restricted from open records requests. However, not all cultural resources are equally significant to the history and prehistory of Texas. Some archeological sites may not possess research value sufficient to warrant long-term preservation or investigations beyond survey level recordation, and some historic buildings and structures retain minimal integrity due to damage or deterioration. Therefore, the issue of whether cultural resources are significant and warrant preservation, and/or further research (such as archeological testing and data recovery level investigations), is addressed through official landmark designation, permit issuance, and rules associated with enforcement of the Antiquities Code. Sections 191.091 and 191.092 of the Texas Natural Resources Code provide that archeological sites and historic buildings and structures on lands belonging to state agencies or political subdivisions of the state of Texas are landmarks or

may be eligible to be designated as landmarks. Also protected under the Texas Natural Resources Code (Section 191.094) are specially designated landmarks on private property [above information compiled from Texas Administrative Code, Title 13, Part 2, Chapter 26, Subchapter A, Section 26.2].

Under the Texas Antiquities Code at the state level, ***archeological sites*** may be considered significant and be recognized or designated as an SAL. The commission uses one or more of the following criteria when assessing the appropriateness of official landmark designation, and/or the need for further investigations under the permit process:

(1) the site has the potential to contribute to a better understanding of the prehistory and/or history of Texas by the addition of new and important information;
(2) the site's archeological deposits and the artifacts within the site are preserved and intact, thereby supporting the research potential or preservation interests of the site;
(3) the site possesses unique or rare attributes concerning Texas prehistory and/or history;
(4) the study of the site offers the opportunity to test theories and methods of preservation, thereby contributing to new scientific knowledge;
(5) there is a high likelihood that vandalism and relic collecting has occurred or could occur, and official landmark designation is needed to ensure maximum legal protection, or alternatively, further investigations are needed to mitigate the effects of vandalism and relic collecting when the site cannot be protected [13 TAC 26.10].

Buildings, structures, cultural landscapes, and non-archeological sites, objects, and districts may be designated as landmarks provided that the following conditions are met:

(1) the property fits within at least one of the following criteria:
    (a) the property is associated with events that have made a significant contribution to the broad patterns of our history, including importance to a particular cultural or ethnic group;
    (b) the property is associated with the lives of persons significant in our past;
    (c) the property embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinctions
    (d) the property has yielded, or may be likely to yield, information important in Texas culture or history;
(2) the property retains integrity at the time of the nomination, as determined by the executive director of the commission; and
(3) for buildings and structures only, the property must be listed in the National Register of Historic Places, either individually, or as a contributing property within a historic district as determined by the Keeper of the National Register or the executive director of the commission [13 TAC 26.19].

CHAPTER 5
SURVEY RESULTS

This chapter presents the results of the cultural resources survey and assesses the effects of the proposed project on prehistoric and historic archeological sites and historic architectural features within the project APE. Recommendations and management considerations based on the findings of this survey are presented in the following chapter.

BACKGROUND RESEARCH RESULTS

Based on a review of the Texas Archeological Sites Atlas online database maintained by the THC and a thorough literature review, the project area was determined to have a high probability of preserving prehistoric archeological sites. Although few significant prehistoric archeological sites are known to exist in the uplands of the Blackland Prairie, floodplain environments provide the sedimentation processes that allow for the rapid burial and preservation of archeological sites. Previous research conducted at site 41DL203 indicated that stratified Late Archaic cultural materials were identified within the Pilot Point Alluvium (cf. Ferring 1990), which began at a depth of approximately 80 cm (31 in) below the modern ground surface. The upper portion of this alluvium is marked by a prominent buried soil, termed the West Fork paleosol, with a cumulic A horizon that is commonly identified throughout the upper Trinity River valley (Ferring 1990).

Prior to fieldwork, THC records were also reviewed for the presence of previously designated resources, including NRHP properties, SAL properties, National Historic Landmarks, Recorded Texas Historic Landmarks, and Historic Texas Cemeteries, within or near the project area. In addition, a records search of the Dallas County Appraisal District was conducted, along with a review of various historic maps and aerial photographs. Few domestic or agriculture-related structures were located within the vicinity historically, as depicted on the various historic period maps and aerial photographs reviewed for this project. Unfortunately, the 30-minute (1:125,000-scale) topographic map series produced by the United States Geological Survey (USGS) between 1891 and 1927 are not of sufficient scale to illustrate individual structures. By the mid-twentieth century, several structures were located along the upland portions of Pleasant Valley Road, as indicated on the 1959 USGS 7.5-minute (1:24,000-scale) Rowlett topographic map. In addition, a significant portion of the area immediately surrounding the project area was disturbed by limestone gravel and quarrying operations prior to the 1960s; however, the Rowlett Creek floodplain was not

impacted by the nearby quarries. More recent aerial photographs and low-altitude satellite imagery indicate that the general area has undergone a rapid expansion in residential and light commercial development in the last two decades. The majority of the APE, however, is in an area that remains relatively undeveloped and in agricultural use.

ARCHITECTURAL SURVEY RESULTS

Based on background research and the visual reconnaissance survey of the proposed project area, two historic period architectural resources were documented. In general, architectural resources within the vicinity of the APE consist primarily of modern (post-1968) residential properties constructed between ca. 1985 and ca. 2000. Through the review of historic aerials, historic maps, the Texas Off System Bridges database (Texas Comptroller of Public Accounts 2013), and onsite observation, the architectural survey of the project area resulted in the identification of two historic-age resources within the project APE. Both resources are transportation-related structures associated with the Rowlett Creek drainage system and were evaluated for NRHP eligibility.

Resource 01 (Old Rowlett Creek Culvert)

Constructed in 1951, Resource 01 is a three-box, formed concrete culvert with flared wing walls (Figures 4 and 5). The structure carries two lanes of vehicular traffic on Pleasant Valley Road over Old Rowlett Creek. The culvert extends northeast–southwest to accommodate the northwest–southeast drainage of the water feature it crosses and measures a total of 34 ft in length and 25.4 ft in width. Railings, located along each side of the structure's deck, extend past the deck and consist of metal and wood posts supporting a metal guardrail. Three wood posts are missing from the railing on the northwest side of the structure.

Resource 01 has retained integrity of location, setting, design, feeling, and association; however, due to the missing posts, integrity of materials has been somewhat compromised. Furthermore, the resource is not exemplary of engineering workmanship. Although Resource 01 has retained its integrity, it is not recognizable as significantly associated with a pattern of transportation development in Dallas County and is not associated with any other historically significant events or persons. Therefore, the transportation-related resource is recommended not eligible for inclusion in the NRHP under Criteria A and B. The resource also does not exhibit the work of a master craftsman and was constructed in an engineering style commonly found throughout the area; therefore, the resource does not possess sufficient significance to meet NRHP eligibility under Criterion C for engineering at the state and local levels of significance. Furthermore, the resource has little potential to provide information that may contribute to an understanding of history. Therefore, the Old Rowlett Creek culvert is recommended not eligible for inclusion in the NRHP under Criterion D.

Resource 02 (Rowlett Creek Bridge)

Resource 02, constructed in 1951, is a two-lane, concrete girder, vehicular bridge on Pleasant Valley Road over Rowlett Creek. The bridge is located approximately 0.34 mile northeast of Creek Meadow Lane and extends northeast–southwest to accommodate the northwest–southeast drainage of Rowlett Creek. The structure has a concrete deck that measures a total of 157 ft in length and

Figure 4. Field photograph of Old Rowlett Creek culvert (Resource 01), view to the northwest.

Figure 5. Field photograph of Old Rowlett Creek culvert (Resource 01), view to the northwest.

27.2 ft in width. The deck is supported by two concrete abutments and four metal bents (Figures 6 and 7). Each bent has four metal columns and a concrete cap. The structure's railing extends past the deck and consists of wood and metal posts supporting a metal guardrail. Alterations to the structure include the addition of a partial concrete wall covering the four metal columns of the southwest center bent, replacement of the concrete cap and metal columns on the northeast bent, and replacement of the metal rail posts supporting the guardrail.

Figure 6. Field photograph of Rowlett Creek bridge (Resource 02), view to the west.

Resource 02 has retained integrity of location, setting, feeling, and association; however, integrity of design and materials has been lost due to alterations to the structure's southwest center and northeast bents and railing. Furthermore, the resource is not exemplary of engineering workmanship. Resource 02 is not recognizable as significantly associated with a pattern of transportation development in Dallas County and is not associated with any other historically significant events or persons. Therefore, the transportation-related resource is recommended not eligible for inclusion in the NRHP under Criteria A and B. The resource also does not exhibit the work of a master craftsman and was constructed in an engineering style commonly found throughout the area; therefore, the resource does not possess sufficient significance to meet NRHP eligibility under Criterion C for engineering at the state and local levels of significance. Furthermore, the resource has little potential to provide information that may contribute to an understanding of history. Therefore, the Rowlett Creek bridge is recommended not eligible for inclusion in the NRHP under Criterion D.

Figure 7. Field photograph of Rowlett Creek bridge (Resource 02), view to the northeast.

ARCHEOLOGICAL SURVEY RESULTS

The majority of the project APE is situated within the floodplain of the Rowlett Creek valley. Due to the potential for deeply buried prehistoric cultural deposits within the Rowlett Creek floodplain, a series of 12 mechanically excavated trenches was systematically placed along the project APE to determine the presence of such deposits (Figure 8). Trench 1 was excavated south of Pleasant Valley Road and west of the Old Rowlett Creek channel. Trench 2 was excavated on the upland toeslope near the southwestern terminus of the APE. Trench 3 was excavated north of the roadway near the western limits of the floodplain. Most of the trenches (n=7; Trenches 4–10 and 12) were excavated in 50-m (164-ft) intervals within the Rowlett Creek floodplain along the northern extent of the APE (i.e., north of Pleasant Valley Road within the proposed new ROW). Trench 11 was excavated north of the roadway and east of the modern Rowlett Creek channel. Initially, Trench 12 was proposed to be placed in the northeastern portion of the APE; however, dense mature vegetation, proximity to overhead electric utilities, and a narrow proposed ROW, coupled with the documentation of prehistoric cultural materials in Trenches 4–6, led to the decision to instead excavate Trench 12 near the Old Rowlett Creek channel to more adequately investigate the archeological deposits in that area.

Geoarcheological research conducted during previous data recovery excavations at nearby portions of site 41DL203 resulted in the development a stratigraphic model for the Rowlett Creek floodplain deposits and identified four distinct unconformity-bounded allostratigraphic units that spanned the Late Pleistocene to the modern periods (Tinsley and Dayton 2011). These deposits were identified based on stratigraphic position, soil development, and, in some cases, radiocarbon dates: historic

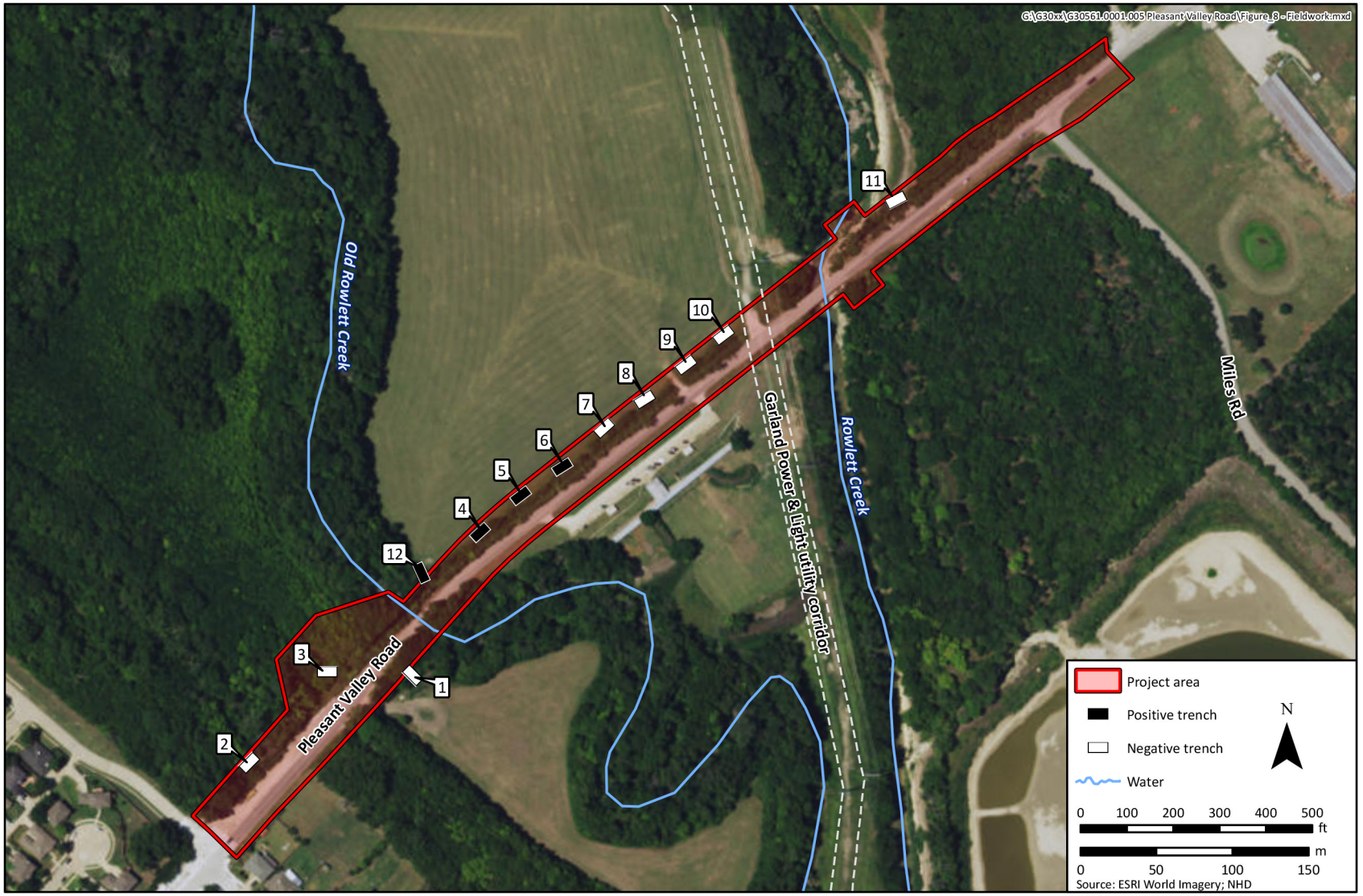

Figure 8. Locations of cultural resources investigations within the project area.

lluvium (less than 150 years B.P.), latest Holocene alluvium (550 to 150 years B.P.), Middle to Late Holocene alluvium (more than 3,100 to ca. 550 years B.P.), and Late Pleistocene to Early Holocene alluvium (9,500 to 6,000 years B.P.). This framework corresponds favorably to that previously described by Ferring (1986, 1990; Ferring and Yates 1997), with the Middle to Late Holocene alluvium analogous to Ferring's Pilot Point alloformation (Pilot Point Alluvium) and the Late Pleistocene to Early Holocene alluvium analogous to Ferring's Sanger alloformation. In the Trinity River basin, the West Fork paleosol (Ferring 1990:26) represents a stable landscape surface that developed during a depositional hiatus in the Pilot Point Alluvium when it was subsequently buried by later Holocene and historic alluvium. Aggradation of the Pilot Point Alluvium began around 4,500 years B.P., and the formation of the West Fork paleosol appears to span the period between 2,000 and 500 years B.P. (Ferring 1990:53). The period of landscape stability reflected by the formation of the West Fork paleosol provided a favorable living surface during the Late Archaic and Late Prehistoric cultural periods. Subsequent burial of this previously stable surface due to renewed alluvial sedimentation provided conditions beneficial to the preservation of prehistoric cultural deposits.

In general, soils encountered within the trenches excavated during this cultural resources survey consisted of modern and historic alluvium overlying the West Fork paleosol and subsequent Pilot Point Alluvium. Soil profiles documented within the individual trenches are summarized below. The three trenches (Trenches 1–3) excavated at the western end of the project area were sterile for cultural materials. In Trench 1, located on the southern side of Pleasant Valley Road, a surface layer of modern fill to a depth of approximately 40 cm (15.8 in) capped the modern and historic alluvium, which persisted to a depth of at least 3.5 m (11.5 ft) below the ground surface. Trench 2, on the north side of the road near the western terminus of the APE, contained both modern fill and colluvium from the adjacent valley slope to a depth of approximately 2 m (6.6 ft) below the ground surface. Below these sediments was the West Fork paleosol, characterized by a prominent buried soil that exhibited a cumulic Ab horizon of very dark gray (10YR 3/1) clay loam with prominent angular blocky structure and common clay films on the ped surfaces. The West Fork paleosol was approximately 30 cm (11.8 in) thick at this location, and the profile gradually lightened in color to a very dark grayish brown (10YR 3/2) clay loam Bk horizon with moderately developed angular blocky structure. These lower sediments correspond with the general description of the Pilot Point Alluvium. Trench 3, excavated adjacent to a periodically inundated area west of the Old Rowlett Creek channel, contained alluvium to a depth of 1.6 m (5.2 ft) overlying a 50-cm-thick (19.7-in) West Fork paleosol (Ab horizon) and the subsequent Pilot Point Alluvium (Bt horizon). Trench 4, excavated east of the Old Rowlett Creek channel, contained alluvium to a depth of 90 cm (35.4 in) overlying an 80-cm-thick (31.5-in) paleosol, which transitioned gradually to a series of Bk horizons within the underlying Pilot Point Alluvium. Prehistoric artifacts, consisting of burned clay, fire-cracked rock, faunal remains, and charcoal were observed in the excavated trench fill and the trench profile extending from a depth of 89 to 185 cm (35.0 to 72.8 in). The soils exposed in Trench 5 displayed a similar profile, with 82 cm (32.3 in) of alluvium overlying the paleosol, which was 33 cm (13 in) in thickness before gradually transitioning to the underlying Bk horizons. A minor amount of prehistoric artifacts (n=7) was observed in the Trench 5 profile at a depth range of 98 to 120 cm (38.6 to 47.2 in). Trench 6 contained alluvium to a depth of 103 cm (40.6 in) overlying a 39-cm-thick (15.4-in) paleosol, which transitioned gradually to a series of Bk horizons. A few small fragments of bone (n=3) and charcoal (n=2) were observed in the excavated fill from the paleosol level. Similarly, the soil profiles exposed in Trenches 7–9 exhibited between 102 and 110 cm (40.2 and 43.4 in) of alluvium overlying the West Fork paleosol, which ranged in thickness from 46 to 80 cm (18.1–31.5 in) before transitioning to the characteristic underlying Bk horizons of the Pilot Point Alluvium. No artifacts

were observed in the excavated fill or the profiles of Trenches 7–9. Trench 10, excavated west of the modern Rowlett Creek channel, exhibited a 70-cm-thick (27.6-in) surface layer of alluvium with evidence of a modern-historic alluvium boundary characterized by the presence of arcuate or broad U-shaped laminated brown (10YR 5/3) silt features characteristic of historic period plow furrows in the lower 26 cm (10.2 in) of the alluvial deposit that have subsequently been in-filled and buried under approximately 44 cm (17.3 in) of later alluvium. Below the historic alluvium, a 55-cm-thick (21.7-in) paleosol was situated above the Bk horizons of the Pilot Point Alluvium. In Trench 11, excavated east of the modern Rowlett Creek channel, modern and historic alluvium was again identified based on the preservation of plow furrows at a depth of 52–73 cm (20.1–28.7 in). Underlying the alluvium was a 35-cm-thick (13.8-in) paleosol that gradually transitioned to a lighter dark gray (10YR 4/1) weak subangular blocky to massive silty clay Bk horizon. At a depth of 160 cm (63 in), the profile darkened to a very dark gray (10YR 3/1) silty clay with moderate subangular blocky structure, possibly indicating a second buried soil horizon, before gradually transitioning to a Bk horizon at a depth of 220 cm (86.6 in). Trench 12, excavated immediately northeast of the Old Rowlett Creek channel, contained 128 cm (50.1 in) of alluvium overlying a 72-cm-thick (28.4-in) paleosol that gradually transitioned to a Bk horizon. Prehistoric artifacts consisting of burned clay, fire-cracked rocks, charcoal, and faunal remains were observed in the excavated fill and the profile of Trench 12 at a depth range of 150–210 cm (59–82.7 in); however, artifacts were concentrated at a depth of 150–190 cm (59–74.8 in).

Of the 12 trenches excavated during this cultural resources survey, a buried cumulic A horizon (i.e., the West Fork paleosol) was encountered in all trenches with the exception of Trench 1 and prehistoric artifacts were encountered in four trenches (Trenches 4–6 and 12). The southwestern extent of the APE encompasses the valley toeslope, where modern construction fill, likely derived from construction of the adjacent housing subdivision, caps a colluvial apron that in turn overlies the West Fork paleosol and the associated Pilot Point Alluvium. Extending northeast onto the floodplain, a low-lying seasonally inundated wetland occupies the area west of the Old Rowlett Creek channel. East of the Old Rowlett Creek channel, a veneer of modern and historic alluvium ranging in thickness between 70 and 128 cm (27.6 and 50.4 in) mantles the West Fork paleosol. These alluvial layers are generally thickest adjacent to the Old Rowlett Creek channel and within a subtle topographic swale that occupies the central portion of the floodplain. The West Fork paleosol is apparently continuous across the floodplain within the APE and ranges in thickness between 33 and 80 cm (13 and 31.5 in). The paleosol undulates and generally increases in thickness and maximum depth adjacent to the Old Rowlett Creek channel and the medial floodplain swale. A generalized stratigraphic diagram of the Rowlett Creek valley based on soil stratigraphy documented within the trenches excavated along the APE is illustrated in Figure 9.

Due to the presence of prehistoric artifacts within the West Fork paleosol documented in Trenches 4–6 and 12 and the proximity to previously recorded archeological site 41DL203, it was determined in consultation with the THC Archeology Division that site 41DL203 likely extends along the Rowlett Creek floodplain into the proposed APE. Due to the restricted dimensions of the proposed APE and the lack of access to the adjacent private property parcel, the spatial extent of site 41DL203 should be considered tentative until the site boundary can be more definitively determined through additional archeological fieldwork across the Rowlett Creek floodplain.

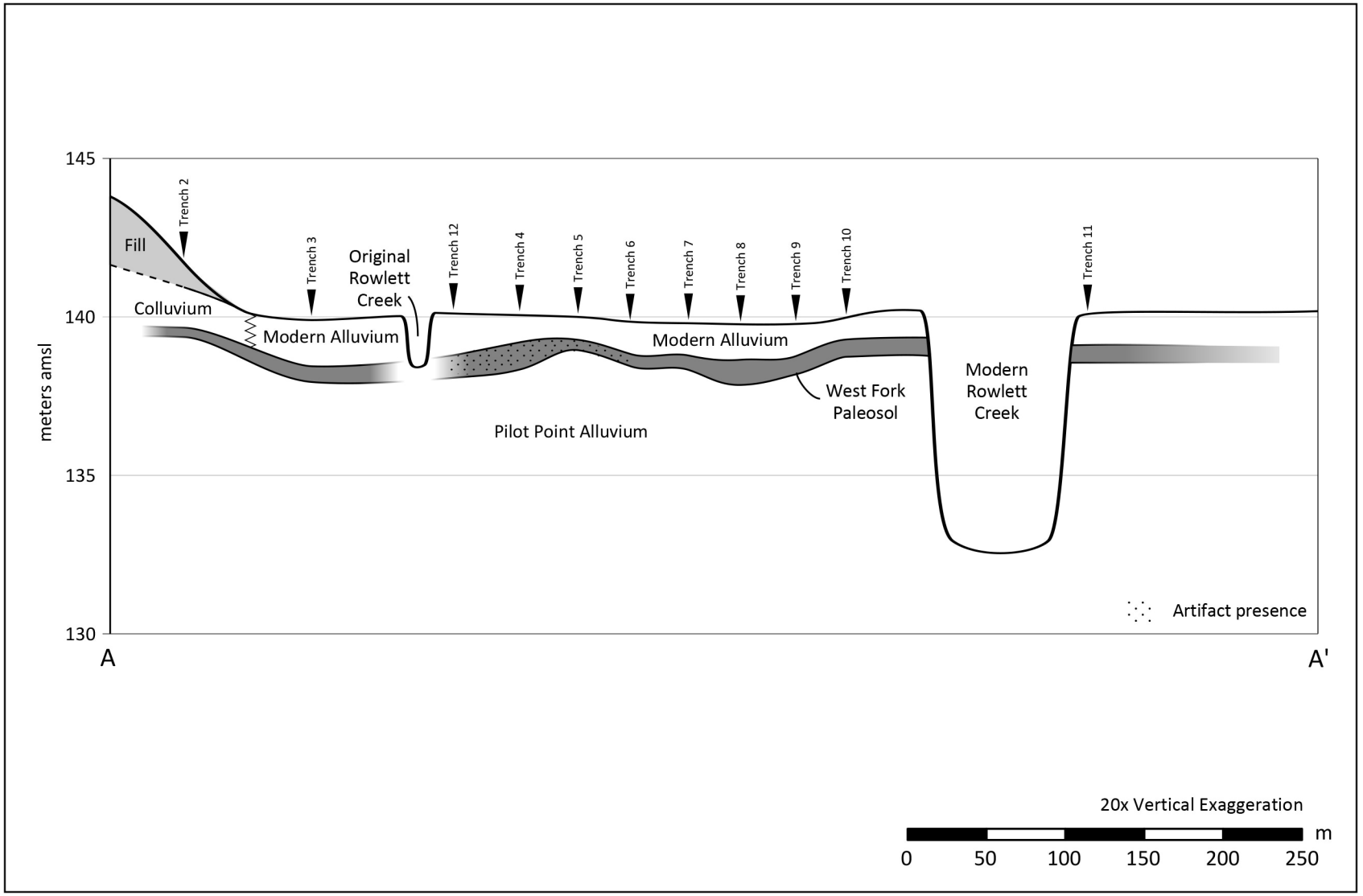

Figure 9. Generalized stratigraphic profile of the Rowlett Creek valley across the study area.

Site 41DL203

Previous Investigations at Site 41DL203

Following its initial identification in the 1980s by researchers from Southern Methodist University, site 41DL203 was first systematically investigated by Hicks and Company in 2006 during a cultural resources reconnaissance survey for the expansion of SH 190 (Feit and Stotts 2006). The cultural resources survey for the Sh 190 survey project consisted of a combination of shovel tests and mechanically-excavated trenches. Eleven shovel tests were excavated along four east-to-west transects between the former and modern channels of Rowlett Creek, and six mechanically-excavated trenches were randomly placed throughout the project area. Shovel tests were excavated to depths of 100 cm, but none yielded cultural artifacts. Soils encountered during shovel testing were uniformly described as very dark grayish brown clay with no inclusions (Feit and Stotts 2006:24). All of the six excavated trackhoe trenches recovered mussel shell and faunal bone, and three trenches contained evidence of burned clay and charcoal. This material was found within two stratified levels, one at approximately 130–140 cm below ground surface and the other at approximately 160–180 cm below ground surface (Feit and Stotts 2006:33). Given the possible multicomponent nature of the site and its potential for addressing prehistoric resource use and seasonality, site 41DL203 was recommended for further testing to determine NRHP eligibility. Testing was recommended in the form of mechanical stripping of the upper meter of soil, followed by hand-dug excavation units (Feit and Stotts 2006:33).

Geo-Marine, Inc. (now Versar, Inc.), conducted test excavations within the proposed SH 190 APE at 41DL203 in 2007 and 2008 to determine site integrity, morphology, age, and to establish the eligibility of the site for inclusion in the NRHP or designation as an SAL (Tinsley and Dayton 2011). The site testing proceeded in three separate stages: (1) excavation of 30 trenches to locate prehistoric cultural materials and to understand the geomorphic context of the site location, (2) excavation of a series of six 0.5-x-0.5-m and eight 1-x-1-m hand-excavated test units to sample the diversity of materials relative to the kinds of items observed in mechanical trenching, and (3) expansion of up to three of the original 1-x-1-m test units to 2-x-2-m test units in the event that further testing might have the potential to contribute to the evaluation of the site for listing in the NRHP (Figure 10).

NRHP-eligibility testing at 41DL203 within the SH 190 APE recovered over 7,000 artifacts, consisting of chipped lithic tools and debris, fire-cracked rock, animal bone fragments, and mussel shell fragments. Nearly 90 percent of these artifacts were found concentrated in three areas of the site. These concentrations of cultural material and the stratified nature of the deposits led Geo-Marine investigators to conclude that site 41DL203 was eligible for inclusion in the NRHP and, due to the adverse effect of SH 190 construction to the site, data recovery excavations were recommended for mitigation.

The data generated through NRHP-evaluation excavations within the SH 190 APE at site 41DL203 allowed investigators to identify five major research themes to which data-recovery excavations at the site might contribute: paleoenvironment, chronology, subsistence, settlement patterns, and exchange (see Tinsley and Dayton 2011). The investigation of these themes offers a framework to provide a regionally coherent research design to query, develop, and shift the focus of archeological research from the culture history framework previously dominant in Northcentral Texas prehistoric archeological syntheses (e.g., Peter and McGregor 1988; Prikryl 1987, 1990; Yates and Ferring

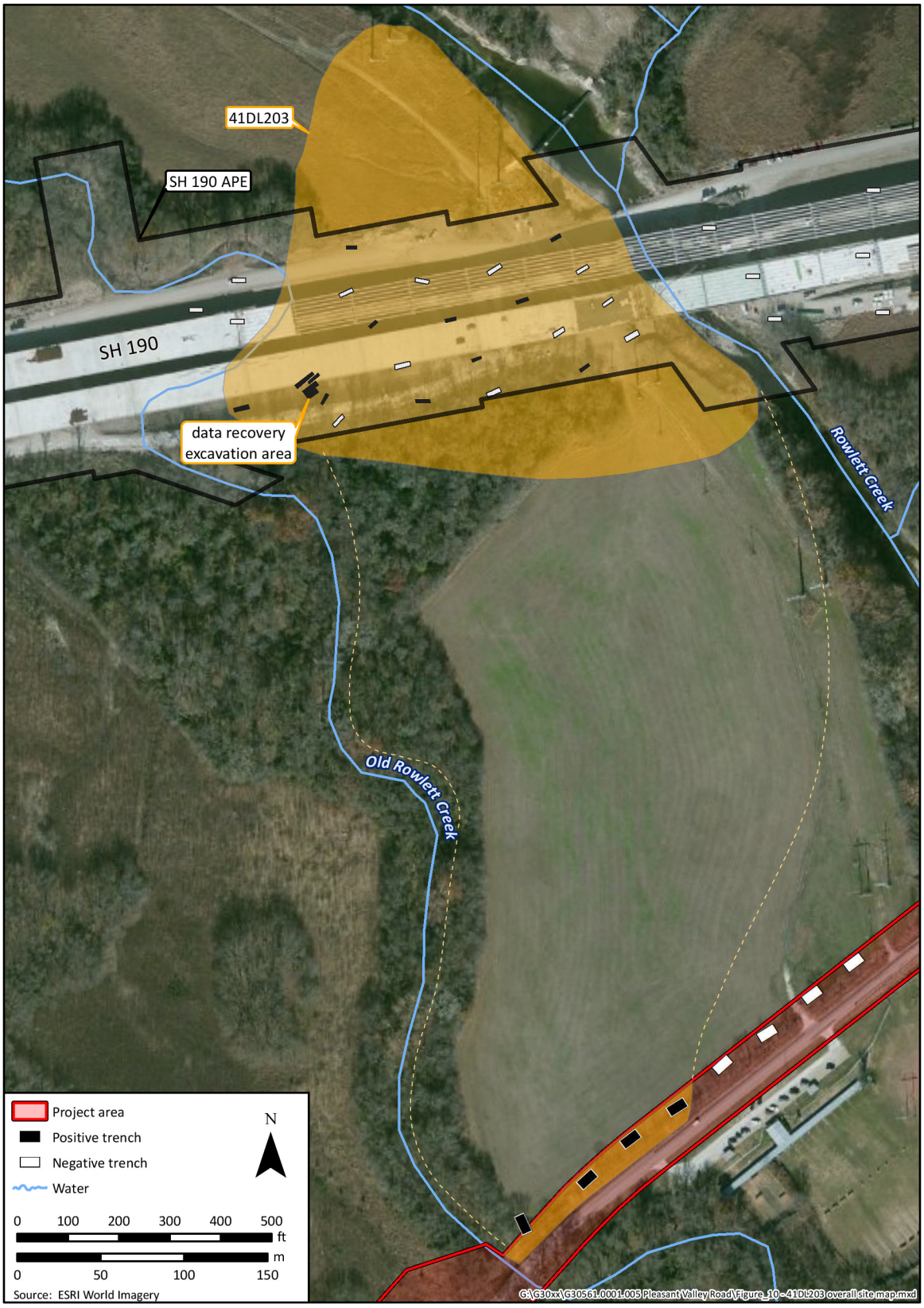

Figure 10. Map of tentative 41DL203 site boundary extending along the Rowlett Creek floodplain.

1986) toward the human/environment contingency-based perspective of historical ecology (Crumley 1994). Data recovery excavations within the SH 190 APE consisted of mechanically removing the modern and historic alluvial overburden to expose the West Fork paleosol deposit, the controlled excavation of a 5-x-5-m unit (see Figure 10) within the paleosol to a depth of 2.25 m below the modern ground surface, and a detailed geoarcheological study of the site area.

The NRHP-evaluation and subsequent data recovery mitigation of the portion of site 41DL203 within the SH 190 APE provides significant site-specific data regarding animal procurement, seasonality, and human use/modification of the local environment. Data spanning the Late Archaic through Late Prehistoric cultural periods are placed within a regional context and share similarities (e.g., subsistence and chronology) with other riverine sites investigated within Northcentral Texas. Some differences, however, were also noted. Increasingly dry conditions associated with the Late Prehistoric were recorded at the site approximately 1,000 years later than at other previously investigated sites in the region. Additionally, the bison-hunting cultural complex (associated with the Late Prehistoric period in the southern plains) was not evident in the 41DL203 assemblage. The data from site 41DL203 are consistence with a small, seasonal hunting site used primarily in the spring and summer months. Although the site investigations offered new regional data concerning paleoenvironment, subsistence, chronology, and settlement patterns, the study also highlighted research limitations of single-site investigations.

Current Investigations at Site 41DL203

Prehistoric artifacts were encountered in Trenches 4–6 and 12, located northeast of the Old Rowlett Creek channel within the currently investigated APE (Figure 11). These artifacts consisted of chipped lithic debris, burned clay, fire-cracked rock, faunal remains, and charcoal. Within the current APE, a veneer of modern and historic alluvium ranging in thickness between 70 and 128 cm (27.6 and 50.4 in) mantles the West Fork paleosol across the floodplain. The West Fork paleosol ranges in thickness between 33 and 80 cm (13 and 31.5 in) across the currently investigated APE (see Figure 9). All artifacts encountered during the current investigation were located within the West Fork paleosol. The artifact assemblage and soil profile encountered within the current APE are consistent with those previously encountered at site 41DL203 (Figure 12). Due to the presence of prehistoric artifacts within the West Fork paleosol documented in Trenches 4–6 and 12 and the proximity to previously recorded archeological site 41DL203, it was decided in consultation with the THC Archeology Division that site 41DL203 likely extends approximately 470 ft (143 m) across the Rowlett Creek floodplain into the proposed APE (see Figure 10). Due to the restricted dimensions of the proposed APE and the lack of access to the adjacent private property parcel, the spatial extent of site 41DL203 should be considered tentative until the site boundary can be more definitively determined through additional archeological fieldwork across the Rowlett Creek floodplain.

Trench 4 contained a moderate amount of prehistoric artifacts, with minimal additional materials recovered in Trench 5 (n=7) and Trench 6 (n=5). The soil profile exposed in Trench 4, excavated northeast of the Old Rowlett Creek channel, exhibited modern and historic alluvium characterized by very dark grayish brown (10YR 3/2) and dark grayish brown (10YR 4/2) silty clay to a depth of 90 cm (35.4 in) overlying an 80-cm-thick (31.5-in) West Fork paleosol deposit consisting of very dark grayish brown (10YR 3/1) silty clay which gradually transitioned to a series of dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) silty clay Bk horizons within the underlying Pilot Point Alluvium. Prehistoric artifacts, consisting of chipped lithic debris, burned clay, fire-cracked

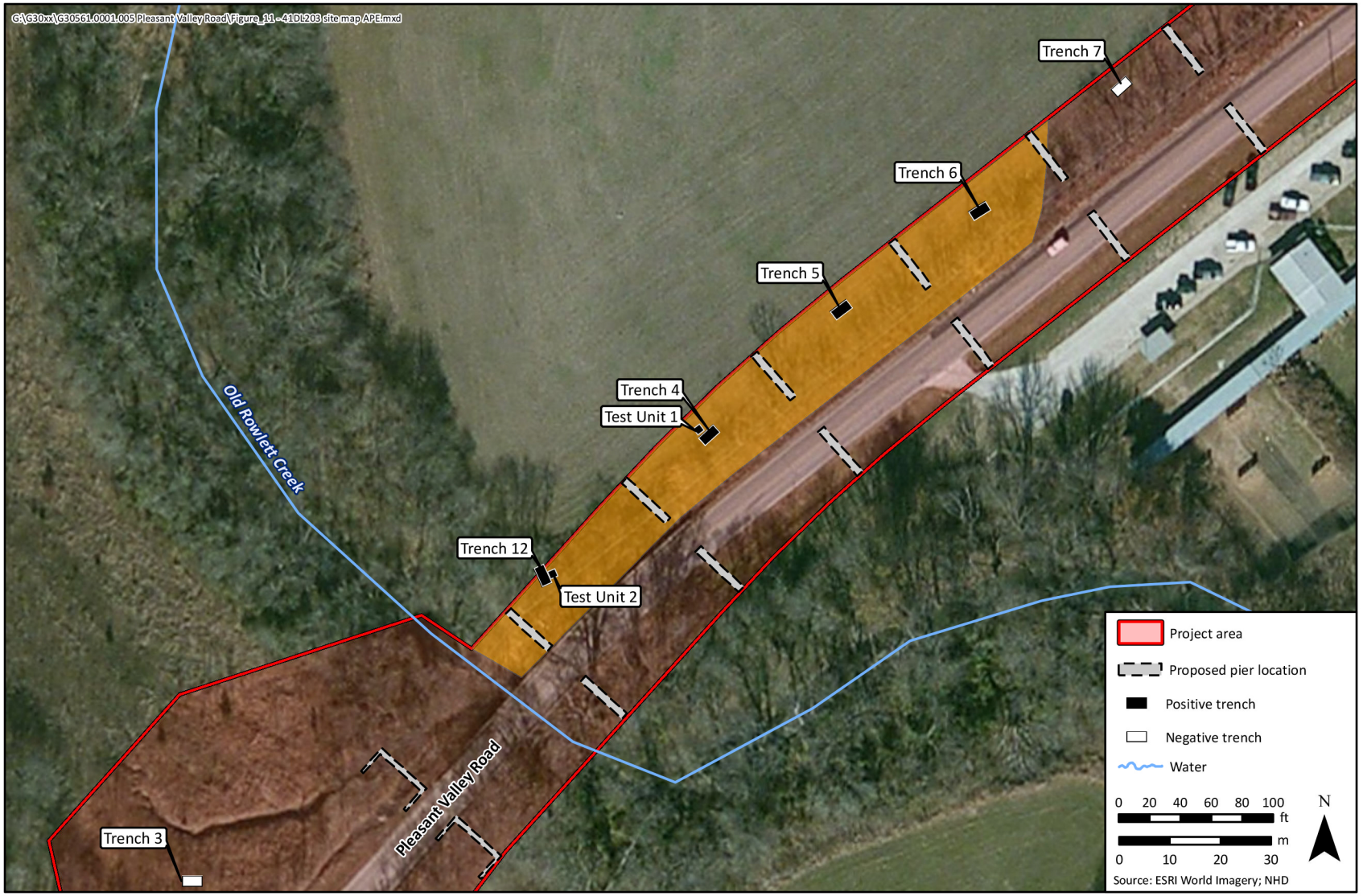

Figure 11. Map of site 41DL203 within current APE.

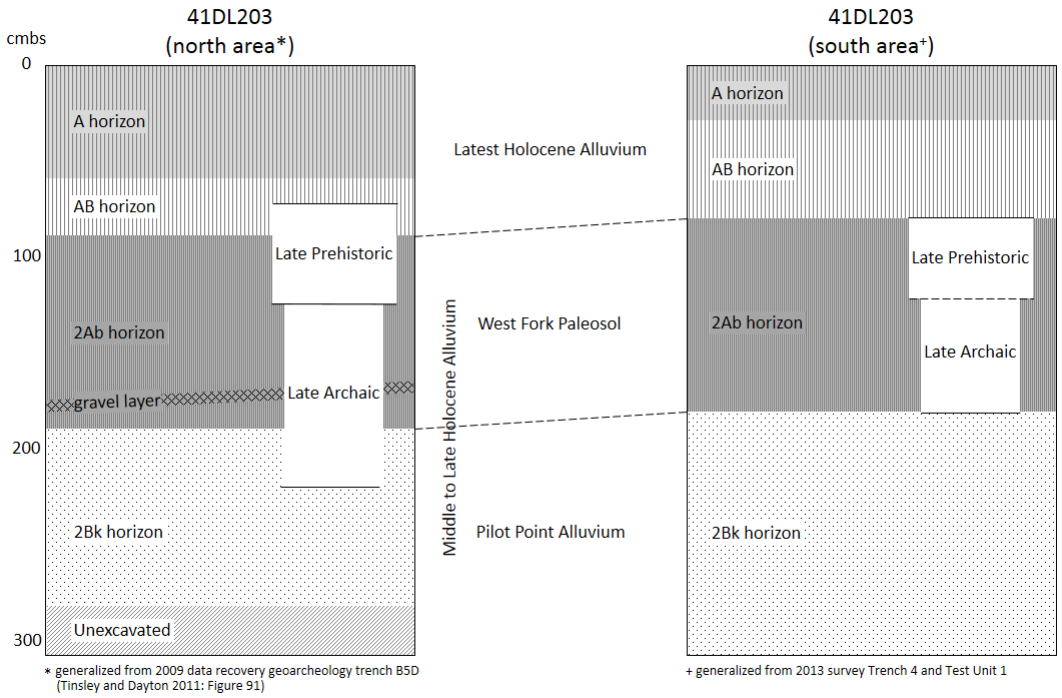

Figure 12. Schematic diagram of excavation profiles within 41DL203 north and south site areas.

rock, faunal remains, charcoal, and two large, generally spherical limestone cobbles (Figure 13) were observed in the excavated trench fill and the trench profile extending from a depth of 89 to 185 cm (35.0 to 72.8 in) within Trench 4. The soils exposed in Trench 5 displayed a similar profile, with 82 cm (32.3 in) of modern and historic alluvium overlying the West Fork paleosol, which was 33 cm (13 in) in thickness before gradually transitioning to the underlying Bk horizons within the Pilot Point Alluvium. A minor amount of prehistoric artifacts, consisting of fire-cracked rock (n=3), faunal remains (n=2), and charcoal (n=2), was observed in the Trench 5 profile at a depth range of 98 to 120 cm (38.6 to 47.2 in). Trench 6 contained modern and historic alluvium to a depth of 103 cm (40.6 in) overlying a 39-cm-thick (15.4-in) West Fork paleosol, which transitioned gradually to a series of Bk horizons within the underlying Pilot Point Alluvium. A few small fragments of bone (n=3) and charcoal (n=2) were observed in the excavated fill from the West Fork paleosol level within Trench 6. Trench 12, excavated immediately northeast of the Old Rowlett Creek channel, contained 128 cm (50.1 in) of modern and historic alluvium overlying a 72-cm-thick (28.4-in) West Fork paleosol that gradually transitioned to a Bk horizon within the underlying Pilot Point Alluvium. Prehistoric artifacts consisting of burned clay, fire-cracked rocks, charcoal, and faunal remains were observed in the excavated fill and the profile of Trench 12, including a mass of burned clay with vegetation impressions (Figure 14) adhering to several imbricated fire-cracked rocks. Artifacts were recovered at depths ranging from 150–210 cm (59–82.7 in); however, artifacts were concentrated within a depth range of 150–190 cm (59–74.8 in).

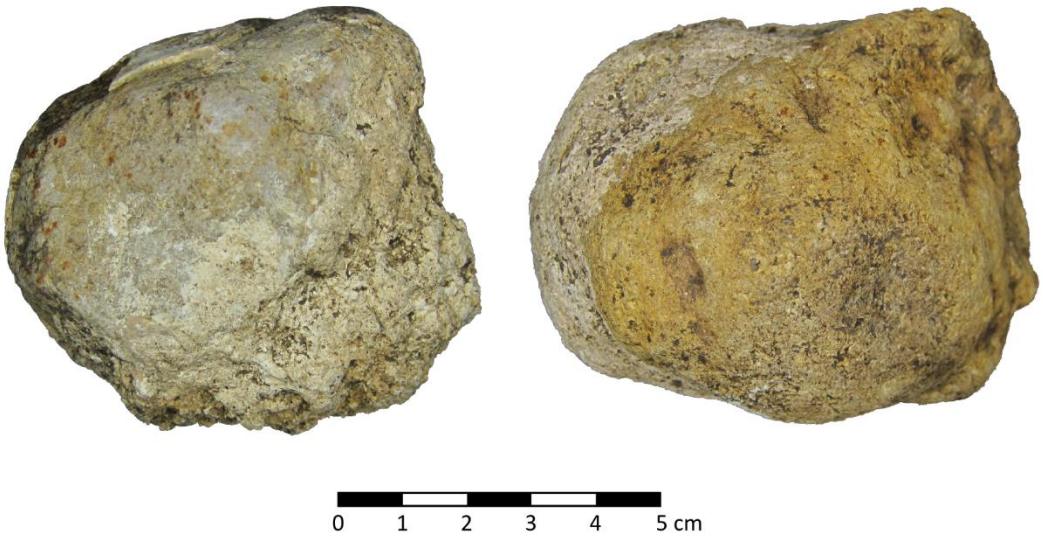

Figure 13. Limestone cobbles recovered in Trench 4 at site 41DL203.

Figure 14. Vegetation-impressed burned clay recovered in Trench 12 at site 41DL203.

Based on the presence of prehistoric artifacts within the West Fork paleosol deposit observed in Trenches 4 and 12, two additional controlled test excavation units were placed adjacent to the trench locations (see Figure 11). The test units, each measuring 1-x-1-m, were excavated to provide additional data for the NRHP and SAL evaluation of the prehistoric cultural deposits encountered within Trench 4 and Trench 12. Prior to manual excavation, the overlying modern and historic alluvium was mechanically removed to expose the West Fork paleosol previously documented within each of the adjacent trenches. The test units were then hand-excavated in 10-cm intervals until two consecutive culturally-sterile levels were encountered in each unit. Test Unit 1, located adjacent to Trench 4, was excavated from a depth of 80–200 cm below modern ground surface. Test Unit 2, located adjacent to Trench 12, was excavated from a depth of 130–210 cm below modern ground surface. Excavated fill was passed through 0.63-cm (0.25-inch) hardware mesh to facilitate artifact recovery.

Artifact Analysis

In total, 622 artifacts were recovered in 2 cubic meters (m^3) of soil excavated from the two controlled test units within the portion of 41DL203 in the proposed APE. These artifacts consisted of 371 faunal remains, 201.4 grams (g) of fired or baked clay, 928.9 g of thermally altered or fire-cracked rock, 68 pieces of chipped lithic debitage, one edge-modified flake tool, one lithic core, one arrow point fragment, one dart point, and four charred botanical fragments. Most of the artifacts recovered during this investigation were recovered in Test Unit 1 with only a minor amount of additional cultural material recovered in Test Unit 2 (Table 3). Within Test Unit 1, artifacts were encountered between depths of 80 and 180 cm below surface (cmbs); consistent with the adjacent Trench 4 (where artifacts were documented between 89 and 185 cmbs). Artifacts were concentrated at a depth range of 110–160 cmbs, clearly within the West Fork paleosol extending from 90–170 cmbs within the excavation unit. Test Unit 2 produced a relative paucity of artifacts with a peak artifact density at 160–170 cmbs within the West Fork paleosol extending between 130 and 180 cmbs within the excavation unit.

Fire-cracked Rock

Thermally altered or fire-cracked rock (FCR) is a common class of archeological material throughout North America (Thoms 2009) and is particularly ubiquitous in Central Texas, where dense fire-cracked rock concentrations—variously labeled burned rock middens, thermal features, and rock ovens, among other terms—"have long received a large share of archeologists' attention" due to their widespread occurrence (Collins 2004:109). Although fire-cracked rock is present at a lesser scale in Northcentral Texas (for a rare exception, see Lintz et al. 2008), it is nonetheless an important material class with the potential to illuminate changes in prehistoric subsistence patterns. Recent experimental studies have produced data and models with implications beyond Central Texas, some focusing on fire-cracked rock fragment morphology (e.g., Backhouse and Johnson 2007) and others on fragment size distributions as an indicator of repeated reheating (e.g., Pagoulatos 2005; Thompson and Mauldin 2008). During the previous data-recovery excavations at site 41DL203, investigators concluded that the fire-cracked rock assemblage at the site displays size distributions characteristic of few to no reuse episodes (Tinsley and Dayton 2011:75).

Table 3
Summary of Cultural Materials Recovered in Test Units

Depth (cmbs*)	Test Unit 1 Lithic (n)	Faunal (g)	B. clay (g)	FCR (g)	Charcoal present (x)	Test Unit 2 Lithic (n)	Faunal (g)	B. clay (g)	FCR (g)	Charcoal present (x)
80–90	–	0.50	0.2	41.5	x	n/a	n/a	n/a	n/a	n/a
90–100	1	0.30	1.0	1.6	x	n/a	n/a	n/a	n/a	n/a
100–110	–	1.10	–	–	x	n/a	n/a	n/a	n/a	n/a
110–120	2	8.70	1.7	484.4	x	n/a	n/a	n/a	n/a	n/a
120–130	3	55.95	7.7	122.5	x	n/a	n/a	n/a	n/a	n/a
130–140	20	37.05	143.9	14.9	x	–	–	–	–	–
140–150	16	146.60	13.2	6.4	x	1	–	–	–	x
150–160	19	98.45	22.8	246.1	x	–	23.00	–	–	x
160–170	4	21.95	9.5	9.7	–	3	38.80	1.0	–	x
170–180	2	12.55	0.4	1.8	–	1	1.90	–	–	x
180–190	–	–	–	–	–	–	23.30	–	–	x
190–200	–	–	–	–	–	–	–	–	–	–
200–210	n/a	n/a	n/a	n/a	n/a	–	–	–	–	–
Total	67	383.15	200.4	928.9	x	5	87.00	1.0	–	x

* centimeters below surface
n/a = not excavated

During the current investigations at site 41DL203, no in situ fire-cracked rock features or concentrations were encountered. Fire-cracked rock was observed during the initial excavation of Trenches 4, 5, and 12; however, only 37 fragments weighing less than 1 kilogram (kg) were recovered in Test Units 1 and 2. The paucity of fire-cracked rock recovered within the currently investigated portion of the site does not allow for any statistically valid analysis of this material class.

Burned Clay

Masses of burned or baked clay are common at prehistoric sites in Northcentral Texas and surrounding regions. Burned clay may be found as massive, fused deposits enclosing hearths or cooking pits (Osburn and Ward 2007), shaped or rounded nodules that served as boiling "stones" (Ford and Webb 1956), fallen wattle-and-daub structures (Boyd 2004b), fallen plastered thatch structures (Drass 2008), intrusive or local material deliberately or accidentally trampled into a living surface, masses introduced into a living area on collected plant roots (Goldberg 2008), insect nests that can sometimes be considered as proxy indicators of human occupation (Boyd 2004b), or as evidence of forest fires with no direct indication of human activity. Previous investigations at site 41DL203 identified the possibility of multiple types and functions of burned clay objects and included experimental studies to replicate some of the hypothesized phenomena (Tinsley and Dayton 2011:102–117). Results of the experimental studies suggest that much of the burned clay recovered at the site is likely due to the use of fired clay balls as heating elements in hearths or for stone boiling, a common pre-ceramic cooking technique, in an environment where readily-available stone is relatively scarce (Tinsley and Dayton 2011:111). Experimental evidence also suggested the possibility of mud-plastered thatch surfaces; however, results were inconclusive and the lack of ethnographic or archeological corroboration was noted (Tinsley and Dayton 2011:117).

No intact burned clay features were encountered during the current investigations at site 41DL203. Many burned clay masses encountered during the current investigation were poorly hardened or extensively reworked by taphonomic processes indicating that this artifact class is probably underrepresented due to mechanical disintegration during the recovery process. Burned clay was observed during the initial excavation of Trenches 4, 5, and 12 as small masses or nodules within excavated trench fill or within the trench profile matrix. In addition, over 200 g of burned clay was recovered in Test Unit 1, with a concentration between 130 and 140 cmbs representing 72 percent of the total recovered from the unit. Approximately 35 percent of the burned clay masses recovered in Test Unit 1 retain traces of vegetation impressions, of which nearly all (94 percent) were recovered within the 130–140 cmbs concentration. All burned clay fragments with vegetation impressions were impressed only on one side and no examples were found with vegetation integrated into the matrix (i.e., as temper), a necessary component of daub. Of particular interest is the recovery of a mass of vegetation-impressed burned clay adhering to several small, imbricated fire-cracked rocks during the excavation of Trench 12. Unfortunately, the mass was recovered in the excavated trench fill and largely disintegrated upon recovery (see Figure 14). The recovery of this item provides anecdotal evidence that the lenticular burned clay lenses previously encountered at site 41DL203 may have been remnants of thermal features as well; however, none of these lenticular burned clay features were encountered within the currently investigated portion of the site and conclusive evidence of the functions of these features remains elusive.

Chipped Lithic Artifacts

Chipped lithic artifacts represent a common artifact class in Northcentral Texas. This artifact class includes tools, projectile points, and unmodified debitage (waste material from chipped stone tool manufacture). Within the Northcentral Texas region, chipped lithic artifacts are commonly made of locally-occurring quartzite gravels and, to a lesser extent, chert and other cryptocrystalline materials from surrounding regions. Previous investigations at site 41DL203 identified a minor Late Prehistoric cultural component characterized by a small sample of Bonham, Fresno, and Scallorn style arrow points overlying a relatively more robust Late Archaic component characterized primarily by Gary style dart points, but also including examples of Dawson, Godley, Kent, and Yarbrough types. Lithic raw materials previously documented at site 41DL203 consisted primarily of locally-available quartzite.

A minor amount of chipped lithic debitage (n=6) were observed within the Trench 4 fill during the initial investigations for the current project. Sixty-seven chipped lithic artifacts were recovered during the excavation of Test Unit 1 (Table 4), including one arrow point fragment in the 110–120 cmbs level, one dart point at 143 cmbs, one expedient cutting tool in the 140–150 cmbs level, and one amorphous core in the 150–160 cmbs level. The remainder of the chipped lithic artifacts recovered in Test Unit 1 consist of unmodified debitage concentrated between 130 and 160 cmbs. A minor amount of additional unmodified debitage (n=4) was recovered in Test Unit 2 between 140 and 180 cmbs.

Temporally diagnostic chipped lithic artifacts recovered at site 41DL203 during the current investigation are limited to the arrow point fragment and the dart point recovered in Test Unit 1. The dart point is consistent with the Gary type (Turner and Hester 1999:123) common throughout the Late Archaic period in Northcentral Texas. The point measures 38.9 millimeters (mm) in total length with a generally symmetrical, triangular blade, contracting stem, and a slightly beveled cross-section that is 6.9 mm in maximum thickness (Figure 15a). A small impact fracture is evident

Table 4
Summary of Chipped Lithic Artifacts Recovered in Test Units

Depth (cmbs)	Test Unit 1 Arrow (n)	Dart (n)	Core (n)	Tool (n)	Debitage (n)	Test Unit 2 Arrow (n)	Dart (n)	Core (n)	Tool (n)	Debitage (n)
80–90	–	–	–	–	–	n/a	n/a	n/a	n/a	n/a
90–100	–	–	–	–	1	n/a	n/a	n/a	n/a	n/a
100–110	–	–	–	–	–	n/a	n/a	n/a	n/a	n/a
110–120	1	–	–	–	1	n/a	n/a	n/a	n/a	n/a
120–130	–	–	–	–	3	n/a	n/a	n/a	n/a	n/a
130–140	–	–	–	–	20	–	–	–	–	–
140–150	–	1	–	1	14	–	–	–	–	1
150–160	–	–	1	–	18	–	–	–	–	–
160–170	–	–	–	–	4	–	–	–	–	3
170–180	–	–	–	–	2	–	–	–	–	1
180–190	–	–	–	–	–	–	–	–	–	–
190–200	–	–	–	–	–	–	–	–	–	–
200–210	n/a	n/a	n/a	n/a	n/a	–	–	–	–	–
Total	1	1	1	1	63	0	0	0	0	4

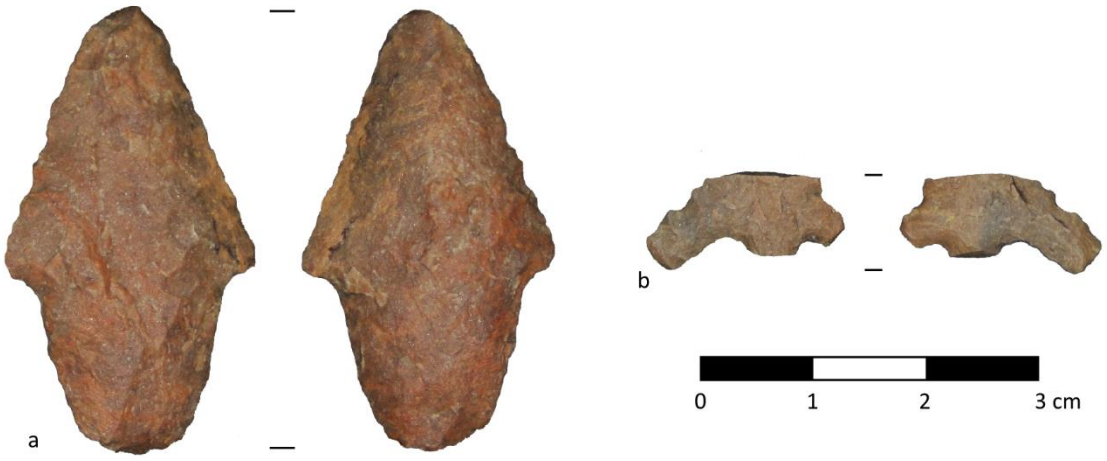

Figure 15. Dart point (a) and arrow point fragment (b) recovered in Test Unit 1 at site 41DL203.

on the distal end of the artifact, supporting the identification of its primary function as a projectile point rather than as a knife. Unfortunately, the arrow point is too fragmentary to reliably assign it to a designated type (Figure 15b), but association with the Late Prehistoric occupation of the site is certain based on the adaptation of bow-and-arrow technology in the region. Other functionally diagnostic chipped lithic artifacts recovered at the site are limited to one piece of edge-modified debitage that likely served as an expedient cutting tool and one small amorphous core.

Nearly all (97 percent; n=75) of the chipped lithic artifacts recovered during this investigation where manufactured from locally-available quartzite. Previous archeological investigations in Northcentral Texas consistently note the lack of chert within the regional artifact assemblages and the abundance of quartzite (Ferring and Yates 1997; Fields et al.1997; McGregor et al. 1996; Prikryl 1990; Skinner and Baird 1985). Quartzite is a metamorphic rock consisting primarily of recrystallized quartz (Bates and Jackson 1984:414). Quartzite occurs across the Northcentral Texas region in upland Tertiary gravel deposits, often termed Ogallala gravels (Ferring and Yates 1997), which are commonly redeposited in alluvial settings. This material occurs in varieties ranging from fine- to coarse-grained and in color variations that include yellows, reds, and grays. One piece of silicified wood debitage and one piece of chert debitage were recovered in Test Unit 1, both from a depth of 150–160 cmbs. These two artifacts represent the only non-quartzite artifacts recovered during this investigation at the site.

Botanical Remains

Botanical remains identified on prehistoric archeological sites in Northcentral Texas are typically confined to charred plant remains recovered opportunistically within the soil matrix during excavation or during flotation of excavated soil samples. Previous investigations at site 41DL203 identified evidence of a diversity of woody angiosperms present during the prehistoric occupation of the site (Tinsley and Dayton 2011:68–71). Throughout the site deposits, consistent indications were found of deciduous mesic slope and bur oak-shumard oak forest types. Nine tree taxa were previously identified: *Carya illinoinensis* (pecan), *Carya* sp. (hickory), *Celtis* sp. (sugarberry, hackberry), *Fraxinus* sp. (ash), *Populus deltoides* (cottonwood), *Prunus* sp. (plum), *Quercus* sp. (deciduous oak), *Quercus* cf. *muehlenbergii* (chinquapin oak), and *Ulmus* (elm). In addition, a single example of a carbonized sedge tuber identified as *Cyperus* cf. *esculentus* (nutsedge, nutgrass, or chufa), which is often found on well-drained sandy soils, was recovered.

During the current investigation, botanical remains were noted in nearly all excavation levels as charcoal flecks within the soil matrix (see Table 3). The few botanical remains recovered during this investigation (n=4) consist of opportunistically collected wood charcoal (n=2) and charred nutshell (n=1) encountered during excavation of the two test units and charred nutshell (n=1) identified in the flotation sample taken from a depth of 136–138 cmbs within an artifact concentration encountered in Test Unit 1. Formal identification of these botanical remains was not conducted; however, a cursory examination suggests that the charred nutshells belong to the walnut family (Juglandaceae); probably hickory (*Carya* sp.) or black walnut (*Juglans nigra*). These nut remains may indicate subsistence refuse or inclusions in fuel wood sources.

Faunal Remains

The faunal assemblage previously recovered from site 41DL203 represents one of the largest and best-preserved faunal datasets in Northcentral Texas. The excellent preservation and sample size allowed for an extensive analysis (Tinsley and Dayton 2011:119–133). Although fragmentation as a result of prehistoric marrow extraction hindered certain quantification techniques (i.e., minimum number of individuals [Lyman 1994]), information concerning resource exploitation, butchery patterns, and environmental conditions was obtained from the assemblage. A noticeable increase in the intensity of marrow extraction was revealed in the early Late Archaic and Late Prehistoric periods. Previous analysis also indicates that, throughout all phases of site occupation, large prey

(white-tailed deer and bison) underwent primary butchering in proximity to the site, with the meat-rich carcass being transported to another location offsite. Both the vertebrate and molluscan fauna provide separate but complementary proxy indicators of the Holocene environment of site 41DL203. Collectively, these samples reveal an active riparian environment that may have progressively undergone changes consistent with increasingly dry environmental conditions beginning in the Late Prehistoric period.

During the current investigation at site 41DL203, identifiable faunal remains were observed in the excavated fill in Trenches 4 and 12. Additional well-preserved, although fragmentary, faunal remains were recovered in Test Units 1 and 2. In total, 465 faunal specimens (741.6 g) were recovered during these investigations (Table 5), including 378 vertebrate fauna specimens (469.5 g) and 87 mussel shells and mussel shell fragments (272.1 g). Approximately 52 percent of the vertebrate assemblage (n=198) and 39 percent (n=34) of the molluscan assemblage were identifiable; the remainder of the collection was unidentifiable to any useful diagnostic criteria. Quantification of the faunal assemblage is summarized as number of identified specimens per taxon (NISP) and as minimum number of individuals (MNI). The minimum numbers method was chosen as the most suitable analytical measure of abundance. The fragments method and the weights method to quantify results require many assumptions regarding processing techniques and post-mortem and/or post-depositional preservation. MNI estimates were calculated according to the most frequently occurring element, based on symmetry and element portion (Munzel 1986).

The faunal remains from site 41DL203 demonstrate a subsistence reliance on white-tailed deer (*Odocoileus virginianus*), supplemented by freshwater mussels, turtles, fish, and turkey. Deer appear to have provided the primary source of subsistence and are represented by 65 identifiable elements. The MNI of two is based on the identification of two right navicular cuboid bones, a dense bone found in the ankle of the rear leg. At least one deer is immature, as indicated by the lack of epiphyseal fusion in two tibiae and one metapodial recovered. This implies that it was killed during the summer or early fall, as fawns are born in the spring. The specimens recorded as indeterminate large mammal (n=123) are probably the remains of deer as well. A dog or coyote (*Canis* sp.) is represented by a mandible fragment recovered at a depth of 120–130 cmbs in Unit 1. This could be the remains of coyote (*C. latrans*), often hunted for their pelts, or domestic dog (*C. familiarus*) as prehistoric peoples often kept dogs to participate in hunting activities, to eat in times of extreme food scarcity, to alert site occupants of danger, and to aid in the disposal of dietary refuse.

Turtles were also likely to be an important food source and were probably opportunistically procured in the riverine site environment. Box turtle (*Terrapene* sp.) is more abundant in the faunal assemblage, but mud or musk turtle (Kinosternidae) and pond slider (*Pseudemys* sp.) were also identified. The later species prefers permanent, slow-moving shallow streams with muddy bottoms and were probably collected from the adjacent Rowlett Creek. Fish remains are rare at the site, which is likely a reflection of taphonomy and archeological recovery techniques rather than an indication of prehistoric subsistence patterns.

Several fossorial or burrowing species are likely intrusive to the site deposits and may not be representative of subsistence remains: frog/toad (Anura), snake (Colubridae), pocket gopher (*Geomys bursarious*), and cotton rat (*Sigmadon hispidus*). The burrowing activity of these fauna have the potential to disturb and, in extreme cases, destroy the spatial organization of archeological deposits.

Table 5
Summary of Identifiable Faunal Remains from Site 41DL203

Taxon	NISP	MNI
MAMMALS (MAMMALIA)		
Ungulates (Artiodactyla)		
White-tailed deer (*Odocoileus virginianus*)	65	2
Large terrestrial mammal (deer size)	123	
Rodents (Rodentia)		
Cotton rat (*Sigmodon hispidus*)	1	1
Pocket gopher (*Geomys bursarius*)	4	3
Carnivores (Carnivora)		
Dog/Coyote (*Canis* sp.)	1	1
BIRDS (AVES)		
Turkey (*Meleagris gallopavo*)	2	1
REPTILES (REPTILIA)		
Snakes (Serpentes)		
Non-poisonous snake (Colubridae)	2	1
Turtles (Testudines)		
Musk/Mud turtle (Kinosternidae)	4	1
Pond slider (*Pseudemys* sp.)	1	1
Box turtle (*Terrapine* sp.)	82	1
Unidentifiable turtle	33	
AMPHIBIANS (AMPHIBIA)		
Frog/Toad (Anura)	2	1
FISH (PISCES)		
Bony fish (Osteichthyes; poss. catfish [Siluriformes])	1	1
FRESHWATER MUSSELS (UNIONOIDA)		
Threeridge (*Amblema plicata*)	32	32
Louisiana fatmucket (*Lampsilis hydiana*)	1	1
poss. Louisiana pigtoe (*Pleurobema* cf. *riddellii*)	1	1
Unidentifiable mussel	53	

Molluscan fauna recovered from site 41DL203 include 87 mussel valves and shell fragments. Of these, 34 valve specimens were identifiable to species, consisting primarily of Threeridge (*Amblema plicata*; n=32); however, Louisiana fatmucket (*Lampsilis hydiana*; n=1) and a possible Louisiana pigtoe (*Pleurobema riddellii*; n=1) were also represented (Figure 16). Threeridge is a robust species, tolerant of drought and low water quality, and may inhabit both lakes and streams. Individual specimens of this species were elongated and compressed, which is indicative of lotic (flowing water) systems with moderate flow. Louisiana fatmucket is tolerant of both lentic (still water) and lotic (rapidly moving) systems and can adapt well to no or low flow conditions. Louisiana pigtoe occurs in small to medium-sized rivers with slow to moderate flows and it is considered to have been extirpated from the region due to the discharge of industrial effluent into the Trinity River during the twentieth century (Howells et al. 1997). Overall, the occurance of these species is consistent with a small to medium, shallow, slow-flowing stream with substratum dominated primarily by mud.

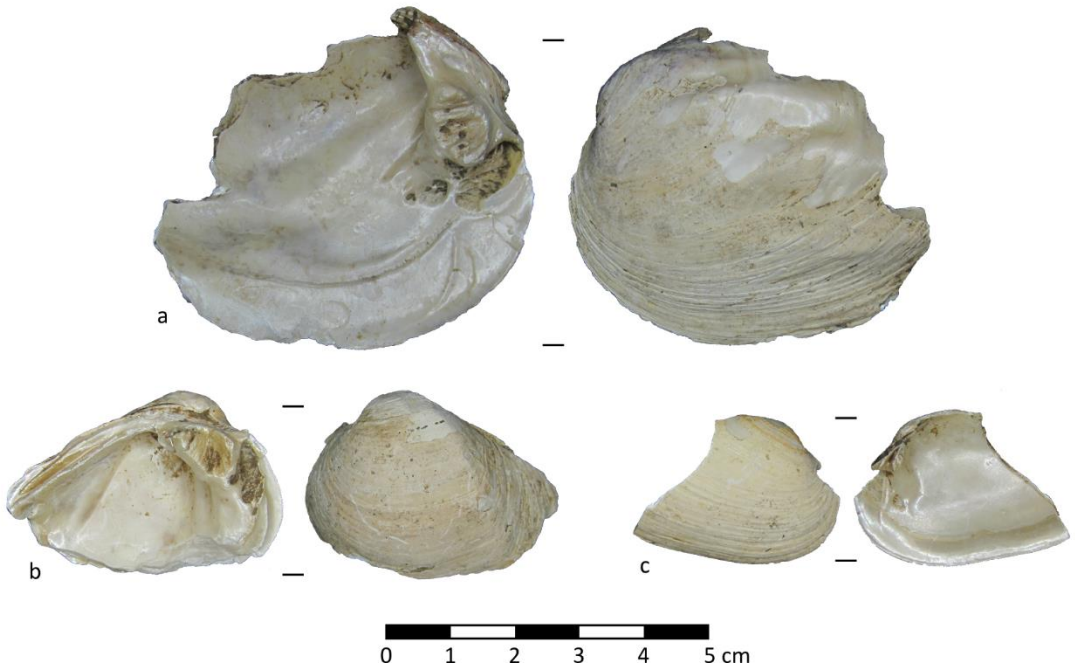

Figure 16. Representative freshwater mussel valves recovered at site 41DL203: (a) Threeridge (*Amblema plicata*), (b) possible Louisiana pigtoe (*Pleurobema* cf. *riddellii*), and (c) Louisiana fatmucket (*Lampsilis hydiana*)

Small freshwater and terrestrial snail shells, which are ubiquitous at floodplain archeological sites in Texas, were noted in excavation records but not collected. Although studies of gastropods may have potential for illuminating paleoenvironment and subsistence regimes, the immediate utility of such studies (from a cost-benefit perspective) have not yet been conclusively demonstrated (e.g., Henry 1995), and the research questions to be addressed require different collection strategies. If snails were part of prehistoric subsistence strategies, the larger individuals (e.g., exceeding 2 cm) were probably selected due to greater nutritional output. However, Brown (1999) argues that smaller snails (e.g., less than 0.3 cm) are more susceptible to climate shifts and therefore more useful for paleoenvironmental reconstructions. Recovering small, fragile specimens from dense floodplain clays presents a significant logistical challenge for an uncertain benefit. Finally, treating snail (especially *Rabdotus* sp.) presence as a general proxy indicator for human occupation is itself problematic. As previously discussed by Brown (1999) and summarized by Tinsley and Dayton (2011), the trampled surfaces of an occupied site are not conducive to snail survival, leading to an expectation of higher snail shell densities in noncultural layers. Conversely, the organic material left by human activities following site abandonment may help drive plant growth and associated snail populations, leading archeologists to expect higher densities of snails in cultural layers. In the absence of obviously burned snail shells (indicating direct evidence of cooking for subsistence purposes), further research is needed to determine if a useful correlation exists between snail shell presence/absence and specific human subsistence activities or occupations.

Radiocarbon Analysis

Of particular importance in the evaluation of a prehistoric archeological site for inclusion in the NRHP or designation as an SAL is the potential for the site to contribute information important in understanding prehistory. This information potential is contingent upon the degree of preservation and the applicability of the associated data to local and regional research questions. The availability and adequacy of information regarding site function, context, and chronological placement is essential to a comprehensive evaluation. Because research questions vary as a result of geography, temporal period, and previous research, the determination of site context and chronology of sites and site components is a particularly important objective during the evaluation process.

The chronological and contextual integrity of the cultural deposits encountered within the portion of site 41DL203 in the current project area was tested with a pair of radiocarbon dates (Table 6). No cultural features or clearly identifiable living or activity surfaces were encountered in the excavations. The best candidate for such a surface was located at approximately 136–143 cmbs in Test Unit 1, where a relatively dense concentration of burned clay, faunal remains, and chipped lithics artifacts were encountered. Accordingly, a charred nutshell fragment, probably hickory (*Carya* sp.) or black walnut (*Juglans nigra*), recovered from the flotation sample taken at a depth of 136–138 cmbs within the artifact concentration was selected for accelerator mass spectrometry (AMS) radiocarbon dating. In addition to the nutshell fragment, a complete box turtle (*Terrapine* sp.) plastron, recovered intact and in a horizontal position at a depth of 141 cmbs, was selected for bone collagen extraction and AMS dating. The results of radiocarbon dating these two closely associated artifacts indicates that a significant time interval separates them, suggesting that either the landscape was generally stable during the A.D. 90–405 interval (and thus the lack of alluvial deposition resulted in little separation of cultural deposits) or some degree of soil mixing has transported the artifacts in relation to their original positions within the deposit.

Table 6
Radiocarbon Dates from Site 41DL203

Beta ID Number	Depth (cmbs)	Material	Method	$^{13}C/^{12}C$ Ratio	Measured Age	Conventional Age	Two-Sigma Calibration Ranges
386493	136–138	Nut shell	AMS	-22.0 ‰	1490 ± 30 B.P.	1700 ± 30 B.P.	Cal AD 255 to 300 (Cal B.P. 1695 to 1650) Cal AD 315 to 405 (Cal B.P. 1635 to 1545)
386492	141	Turtle bone	AMS	-11.9 ‰	1780 ± 30 B.P.	1830 ± 30 B.P.	Cal AD 90 to 100 (Cal B.P. 1860 to 1850) Cal AD 125 to 250 (Cal B.P. 1825 to 1700)

It is postulated the dry Hypsithermal or "Prairie Maximum" period persisted for a longer temporal interval in the extreme Southern Plains than in areas farther north, ending at approximately 4,500–3,200 B.P. (Patton 1977; Wood 1998). Within the Southern Plains, cool and moist conditions of the Neoglacial interval are believed to have extended until approximately 1,500 B.P., when more xeric conditions again dominated (Bryant and Holloway 1985:62–63). These increasingly dry conditions likely resulted in decreased flow along Rowlett Creek and the occurrence of flooding, which in turn decreased sedimentation rates on the floodplain and prompted the development of a cumulic topsoil that is now identified as the West Fork paleosol. This decrease in sedimentation may be responsible for the minimal vertical separation between the radiocarbon-dated artifacts that were likely deposited at least several generations apart.

Summary

Site 41DL203 represents a prehistoric hunting camp that was occupied repeatedly between the Late Archaic and Late Prehistoric periods, probably on a seasonal basis in the summer months. The portion of 41DL203 within the currently investigated APE appears to lack evidence of the deeper, earlier Late Archaic component encountered during the data recovery excavations in the previously investigated portion of the site within the SH 190 APE. Similarly, only a minor Late Prehistoric component was encountered in the uppermost cultural deposits indicated by a single, fragmentary arrow point recovered in Test Unit 1 at 110–120 cmbs during the current investigation; however, two temporal subdivisions of the period, characterized by changes in projectile point morphology, the presence of ceramics, and changes in faunal exploitation, are evident in the Late Prehistoric deposits previously investigated at the site. The overall soil stratigraphy documented within the current project area is remarkably similar to the previously investigated portion of the site; therefore, it is unlikely to assume that evidence of the "missing" cultural periods has been removed by erosion but instead reflects a prehistoric settlement choice to avoid (in the case of the early Late Archaic) or minimize (in the case of the Late Prehistoric) settlement on the particular portion of the landform currently investigated. At the time of site occupation in the Late Archaic period, Rowlett Creek was a mid-order, small to medium, shallow, slow-flowing stream with substratum dominated primarily by mud. The floodplain was likely mantled by a mature, open-canopy bottomland hardwood forest. A mature hardwood stand within a riparian context would have been a valuable resource for both human and fauna living in a prairie environment, and was probably actively managed by its prehistoric human inhabitants.

Comparisons between the chipped lithic artifact assemblages, faunal remains, and botanical remains recovered during the previous and current investigations at site 41DL203 illustrate additional similarities. Based on the increased use of lower-quality quartzite as the primary toolstone, a reduction in mobility within prehistoric groups of Northcentral Texas beginning in the Late Archaic is inferred. This intensification in the use of lower-quality, locally-available lithic materials is believed to be indicative of a more localized adaption than during the previous Middle Archaic period (Crook and Harris 1952; Peter and McGregor 1988). An increase in the number of Late Archaic site components across the region, in tandem with evidence for decreased mobility, has been interpreted as indicating a sharp increase in local populations (McGregor and Bruseth 1987; Peter and McGregor 1988). Peter and McGregor (1988) also detail both large bottomland habitation sites (e.g., 41DL199) as well as creek-side hunting camps (e.g., 41DL189). Late Archaic contexts have consistently revealed a mixed hunting strategy (Ferring and Yates 1998; McGregor and Bruseth 1987; Peter and McGregor 1988) based primarily on large game (typically deer) augmented by smaller, probably opportunistically-procured small game (including turtles, freshwater mussels, fish, turkey, and rabbits) and, despite the limited seasonality information available, spring and summer occupations are suggested. Although bison remains were recovered previously at site 41DL203, no bison or very large mammal remains were recovered during this investigation. Botanical evidence remains limited, but also suggests foraging for a variety of tubers, nuts, and seeds. The pattern of summer exploitation of major tributary drainages is postulated to be part of a much larger seasonal scheduling round, with more permanent sites likely located along the main channel of the Trinity River.

Several aspects of soil disturbance are evident. Prior to the introduction of widespread agriculture during the historic period, the Rowlett Creek floodplain was likely mantled by an open canopy hardwood forest. Due to the forest cover, bioturbation resulting from tree root growth, decay, and infilling is likely responsible for some soil mixing. Clay casts and infilled insect and mammal

burrows were observed in both test units. Evidence of fossorial or burrowing fauna, including pocket gophers, cotton rats, snakes, and frogs and/or toads have resulted in bioturbation as well. Given the plant, animal, and microbiological activity inherent in pedogenesis, the development of the West Fork paleosol is by definition an amalgamation of disturbance vectors. Although the dominant modern soil of the project area (Frio silty clay) is formally classified as a haplustoll, not a vertisol, the high clay content of the soil matrix across this landform is likely to have contributed to some degree of argilliturbation. Clay soils, particularly vertisols, are known to destroy archeological contexts and move artifacts through shrink/swell action (Abbott 2001; Holliday 2004). If this soil cannot be described as a vertisol in the strictest sense, it can at least be characterized as vertic (Holliday 2004).

In summary, the portion of site 41DL203 within the currently investigated APE consists of a locus of prehistoric activity where tasks similar to those that took place at the site as a whole, such as chipped stone tool maintenance, butchering and processing of game animals, and seasonal camping, were conducted during the Late Archaic and Late Prehistoric periods. Archeological deposits were encountered entirely within the West Fork paleosol, formed from alluvium deposited during the Middle to Late Holocene (> 3,100 to ca. 550 years B.P.), and were capped by modern alluvium. Artifacts recovered during investigations within the current APE bear numerous similarities to those recovered within the previously investigated portion of site 41DL203.

CHAPTER 6
SUMMARY AND RECOMMENDATIONS

This cultural resources survey was conducted to document and assess cultural resources within the area proposed for the expansion of Pleasant Valley Road across the Rowlett Creek floodplain and to provide adequate and relevant information for use in the management of cultural resources within the project area. A visual reconnaissance survey by an architectural historian identified two historic period structural resources within the project area. In addition, an archeological survey, consisting of the examination of a series of 12 mechanically-excavated trenches across the Rowlett Creek floodplain, identified a portion of previously recorded prehistoric archeological site 41DL203 within the project area. Limited test excavations were conducted to evaluate the NRHP- and SAL-eligibility of the portion of site 41DL203 within the proposed APE.

Based on background research and the visual reconnaissance survey of the proposed project area by an architectural historian, two historic period architectural resources were documented. Resource 01, constructed in 1951, is a three-box, formed concrete culvert with flared wing walls that carries two lanes of vehicular traffic on Pleasant Valley Road over Old Rowlett Creek. Resource 02, also constructed in 1951, is a two-lane, concrete girder, bridge carrying Pleasant Valley Road over Rowlett Creek. Both resources have retained some aspects of their original integrity; however, the integrity of design and materials of Resource 02 has been lost due to alterations to the structure's southwest center and northeast bents and railings. Neither structure is recognizable as significantly associated with a pattern of transportation development in Dallas County or with any other historically significant events or persons. The resource also does not exhibit the work of a master craftsman and was constructed in an engineering style commonly found throughout the area. Furthermore, the resource has little potential to provide information that may contribute to an understanding of history. Therefore, these structures are recommended not eligible for inclusion in the NRHP under Criteria A, B, C, or D or for designation as SALs.

Site 41DL203 represents a prehistoric seasonal hunting camp that was occupied repeatedly between the Late Archaic and Late Prehistoric periods. A portion of the site within the SH 190 right-of-way was previously mitigated via data-recovery excavations (Tinsley and Dayton 2011); however, the extent of the site has not been comprehensively determined due to the lack of rights-of-entry to the adjacent property parcels. Based on the proximity to the previously documented site area and similarities in landform, soil profile, and artifact content, the archeological remains within the proposed APE were considered to be part of site 41DL203 in consultation with the THC.

Archeological deposits encountered within the proposed APE during the initial survey include faunal remains, burned clay, fire-cracked rock, chipped lithic artifacts, and botanical remains recovered within the West Fork paleosol approximately 1–2 m below the modern ground surface. Because the portion of site 41DL203 within the SH 190 right-of-way was previously determined to be eligible for inclusion in the NRHP, limited test excavations were conducted to provide a preliminary evaluation of the portion of site 41DL203 within the proposed APE.

Artifacts recovered during the excavation of two 1 m^2 test units bear remarkable similarities with artifacts previously encountered during extensive data-recovery excavations at the portion of the site within the SH 190 right-of-way; however, no intact cultural features or clearly identifiable living or activity surfaces were encountered in the current excavations. Two AMS radiocarbon dates generated from artifacts recovered during this effort place the primary occupation of this portion of the site within the later portion of the Late Archaic period (specifically, a two-sigma calibrated date range of AD 90–405). The portion of 41DL203 within the currently investigated APE appears to lack evidence of the deeper, earlier Late Archaic component previously encountered below the paleosol layer within the previously investigated northern portion of the site. Similarly, only a minor Late Prehistoric component, indicated by a single arrow point, was encountered in the uppermost cultural deposits during the current investigation. Although FCR was previously recovered at the site in sufficient quantities to allow meaningful analysis of morphology and distribution, the small sample recovered within the currently investigated portion of the site is insufficient for statistically valid analysis. Similarly, the recovery of burned clay masses within the currently investigated portion of the site fail to provide corroborative evidence for the presence of the vegetation-impressed lenticular clay surfaces encountered in previously investigated portions of the site. The lithic artifact assemblage from the current investigation is relatively sparse (67/m^3 in Test Unit 1), as compared to the previous investigation, and yielded few temporally-diagnostic artifacts. Identifiable botanical remains within the currently investigated portion of the site were limited and were not recovered within cultural features, further limiting their analytical utility. Faunal remains were well-preserved and recovered in moderate quantities within the currently investigated portion of the site but represented a more limited array of species than recovered at the site previously. The two radiocarbon dates taken from artifacts recovered between 136 and 141 cmbs in Test Unit 1 yielded a two-sigma calibrated date range of over 300 years, indicating either a depositional hiatus during the Late Archaic or mixing of site deposits by soil formation processes.

These limited test excavations were conducted to evaluate the NRHP- and SAL-eligibility of the portion of site 41DL203 within the proposed APE. Typically, prehistoric archeological sites are evaluated under NRHP Criterion D (outlined in Chapter 4) for the potential to yield scientifically important information. Scientific importance is driven by current research perspectives and by the state of available information regarding a particular research topic in a specific research area. As regional research progresses, data are accumulated and synthesized to contribute information to research domains. Through time, data needs for some research questions may be addressed, even though complementary data are often needed from different temporal periods, environmental settings, and site types to fully understand the diversity of prehistoric activities within a region. As data required to address specific questions approach redundancy, the importance of similar information may diminish. This suggests that the identification criteria of important historic properties are tied to both a specific geographic area reflecting a cultural adaptation, and the state of accumulated knowledge regarding relevant research domains. At the state level, archeological sites may be considered significant and be recognized or designated as SALs, provided that the conditions outlined in Chapter 4 are met. Based on the five criteria specified under TAC 26.10,

limited testing at site 41DL203 suggests that the SAL criteria do not apply to the portion of the site within the current APE. The potential of the investigated portion of the site to contribute significant or new information to a better understanding of Texas prehistory (SAL Criterion 1) is limited. Since no intact cultural features or other indications of prehistoric intra-site spatial organization were encountered, the portion of the site within the currently investigated APE is not eligible for consideration under SAL Criterion 2. Nothing was recovered from site 41DL203 that could be considered archeologically unique or rare to tributary floodplain settings within the Trinity River drainage basin, as required by SAL Criterion 3. In light of the sparse artifact assemblage immediately adjacent to an area that was more intensively excavated just 5 years prior, it is difficult to argue that the currently investigated portion of site 41DL203 offers the opportunity to test theories or methods of preservation, thereby contributing to scientific knowledge as required by SAL Criterion 4. Given the buried nature of the site deposits and their location within and immediately adjacent to city- and state-owned transportation and utility ROWs, the likelihood of damage to the site by vandalism or relic collecting (SAL Criterion 5) is minimal.

In summary, the archeological deposits within the currently investigated portion of site 41DL203 appear to offer an information potential that is redundant with the previously and extensively excavated portion of the site. It is our recommendation that the portion of site 41DL203 within the Pleasant Valley Road APE has a limited potential to provide new information that would contribute significantly to our understanding of regional prehistory. It is recommended that the portion of site 41DL203 within the Pleasant Valley Road APE does not contribute to the overall eligibility of the site for inclusion in the NRHP or for designation as an SAL under criteria enumerated in 36 CFR 60.4 and 13 TAC 26.10, respectively. Therefore, no additional evaluation or mitigation effort is recommended for the portion of site 41DL203 within the proposed Pleasant Valley Road APE.

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